INJURY EXPERIENCE IN COAL MINING, 1953–54

ANALYSIS OF MINE SAFETY FACTORS, RELATED EMPLOYMENT, AND PRODUCTION DATA

BY JOHN C. MACHISAK, VIRGINIA E. WRENN
NINA L. JONES, AND ELIZABETH J. REID

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ANALYSIS OF MINE SAFETY FACTORS, RELATED EMPLOYMENT, AND PRODUCTION DATA [1]

By

John C. Machisak,[2] Virginia E. Wrenn,[3] Nina L. Jones,[4] and Elizabeth J. Reid [4]

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Introduction and Summary

INJURY DATA and experience at coal mines in the United States for 1953 and 1954 are presented in this publication with a minimum of interpretation and comment because of the numerous tables required to afford detailed comparisons between the 2 years. Corresponding tables for 1953 and 1954 follow in consecutive order under the following general sections:

(A) *General injury experience:*

Tables 1 to 11: Contain current data on number of fatal and nonfatal injuries, frequency and severity rates, and average severity and time-loss rates.

(B) *Selected injury data:*

Tables 12 to 85: Contain current data on causes of injuries, distribution of injuries by part of body injured, days of disability, extent of hand and machine loading, experience by employment and production groups, and various other operating factors and physical conditions related to the occurrence of injuries at the Nation's coal mines.

(C) *Injury experience, by States:*

Tables 86 to 95: Contain data on injuries, injury rates, employment, causes of injuries, and severity and time-loss rates by States.

(D) *Major disasters:*

Tables 96 and 97: Contain data on one major disaster in each year. A major disaster is defined as a single accident in which, or as the result of which, five or more persons were killed instantly or died at any time thereafter.

(E) *Historical coal-mine-fatality experience:*

Tables 98 to 102: Contain data on fatalities and their causes at bituminous-coal and anthracite mines from the earliest records through 1954.

ACKNOWLEDGMENTS

The Bureau of Mines gratefully acknowledges the cooperation of the coal-mining companies and State mining officials in supplying details on injuries and related employment and production data which have made possible the presentation of comparable injury statistics for the industry in 1953 and 1954.

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GENERAL INJURY EXPERIENCE IN 1954

The injury experience at coal mines in the United States during 1954 was the most favorable yet recorded since complete injury statistics were first compiled by the Bureau of Mines in 1930.

The combined frequency rate (fatal and nonfatal) for all coal mines—bituminous (including lignite) and anthracite—was 46.69 per million man-hours of exposure to the hazards of the industry, a decrease of 3 percent from the previous low of 48.13 established in 1953. Data on bituminous coal and lignite are combined.

Both branches of the coal-mining industry attained the highest level of safety in their history. A rate of 44.65 fatal and nonfatal injuries per million man-hours was recorded for the bituminous-coal industry, showing a decrease of 3 percent from the rate of 46.16 in 1953. At anthracite mines the combined frequency rate of 60.41 injuries per million man-hours was 1 percent less than that of the previous year when the overall injury rate was 60.77.

A total of 18,114 fatal and nonfatal injuries occurred at all coal mines in 1954. This was a reduction of 27 percent from the 24,719 reported for 1953. The decline in frequency of injuries in 1954 was not as great as the decline in number owing to a 24-percent drop in man-hours of exposure. The number of fatalities in 1954 was 396, or 14 percent lower than the preceding year; this was the lowest number of deaths in the industry in a 44-year statistical history.

The average number of men working on productive days was 283,705, a drop in employment of 19 percent from 1953 when 351,126 men were engaged in and around the mines. Total man-hours of exposure declined 24 percent in 1954, with a drop of 13 percent in production from 1953.

Of the 17,718 nonfatal injuries, 14 resulted in permanent total disability and 476 in permanent partial disability; 17,228 were of a temporary nature incapacitating the employee for 1 day or more. The average severity of all injuries was 186.4 days per injury; for permanent partial disabilities, 702.8; and for temporary total injuries, 33.8. The standard time charge for each permanent total injury and fatality was 6,000 days. The average number of days lost per 1,000 man-hours worked for all injuries was 8.70; at unedrground mines, 9.34; and at stripping operations, 4.16.

Bituminous-coal and anthracite mines reported 374 fatalities at deep mines in 1954—342 in underground workings and 32 at surface operations connected with underground mines. Twenty-two men were killed at all strip pits while washery and dredge operations were fatality-free for the year. Nonfatal injuries for the industry were distributed as follows: 14,563 in underground, 1,797 at surface, 1,342 at strip, 11 at washeries, and 5 at dredges.

Of the 342 fatal injuries in underground workings, 213 fatalities or 62 percent were the result of falls of roof, face, or rib. This, the No. 1 cause of deaths in coal mines, accounted for 54 percent of the total fatalities. Haulage accidents resulted in death to 74 persons in underground workings and accounted for 22 percent of the underground total.

At surface works operated in conjunction with underground mines, injuries from haulage accidents were the major cause of death, accounting for 13 (41 percent) of the surface fatality total.

Injuries occurring in or around operating machinery took 6 lives at strip pits, while haulage injuries resulted in 5 deaths; these 2 major causes accounted for 27 and 23 percent, respectively, of the stripping fatalities.

Haulage accidents underground resulted in 3,164 nonfatal disabling injuries; falls of roof, face, or rib, 3,147; handling material, 2,986; and machinery, 2,146. These 4 major causes of nonfatal injuries represented 79 percent of the total underground.

Injuries resulting from the handling of material were the major factor in surface accidents. Haulage and falls of persons, respectively, were the next highest agencies involved. The 1,290 lost-time injuries resulting from these 3 causes represented 72 percent of all nonfatal injuries at surface operations.

The leading causes of injuries resulting from accidents at strip mines were handling material (296), machinery (263), and falls of persons (233). The total number of injuries from these 3 causes accounted for 59 percent of the stripping casualties.

At bituminous-coal mines multiple injuries caused 175 deaths in 1954, representing 52 percent of the total of 334 fatalities; trunk (excluding hernia) injuries, 89 (27 percent); head, 58 (17 percent); limbs (leg and ankle, 5, and arm, 1), 6, (2 percent); and part of body not stated, 6 (2 percent).

A total of 14,746 nonfatal injuries at bituminous-coal and lignite mines was distributed as follows: Head (including neck), 676 (5 percent); eye, 886 (6 percent); trunk (excluding hernia) 3,246 (22 percent); hernia, 205 (1 percent); arm (including shoulder, elbow, and wrist), 643 (4 percent); hand and finger, 2,517 (17 percent); leg (including knee and ankle), 2,093 (14 percent); foot and toe, 1,508 (10 percent); multiple, 995 (7 percent); and part of body not stated, 1,977 (13 percent). (See fig. 1.)

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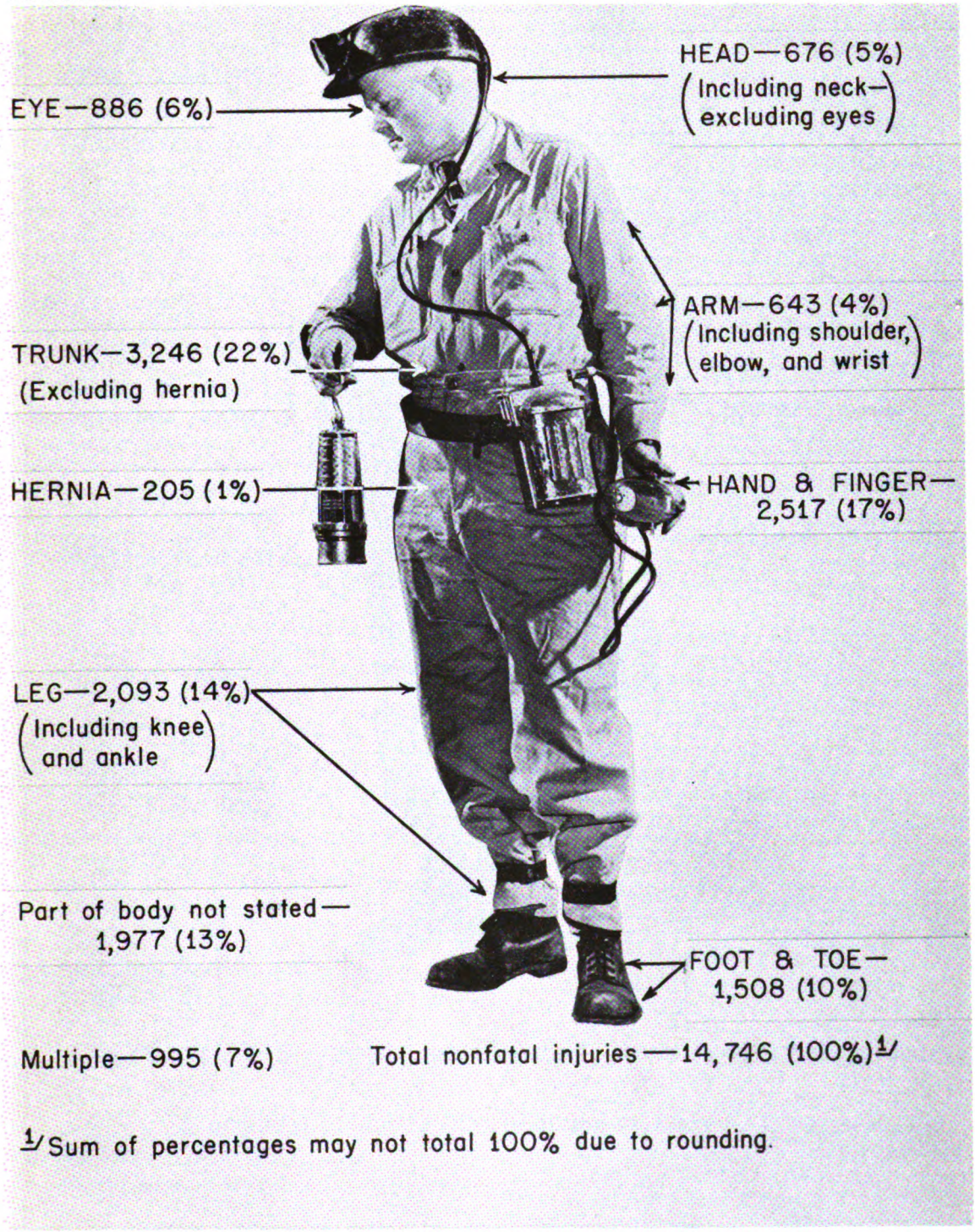

FIGURE 1.—Distribution of Nonfatal Injuries by Part of Body Injured at Bituminous-Coal and Lignite Mines.

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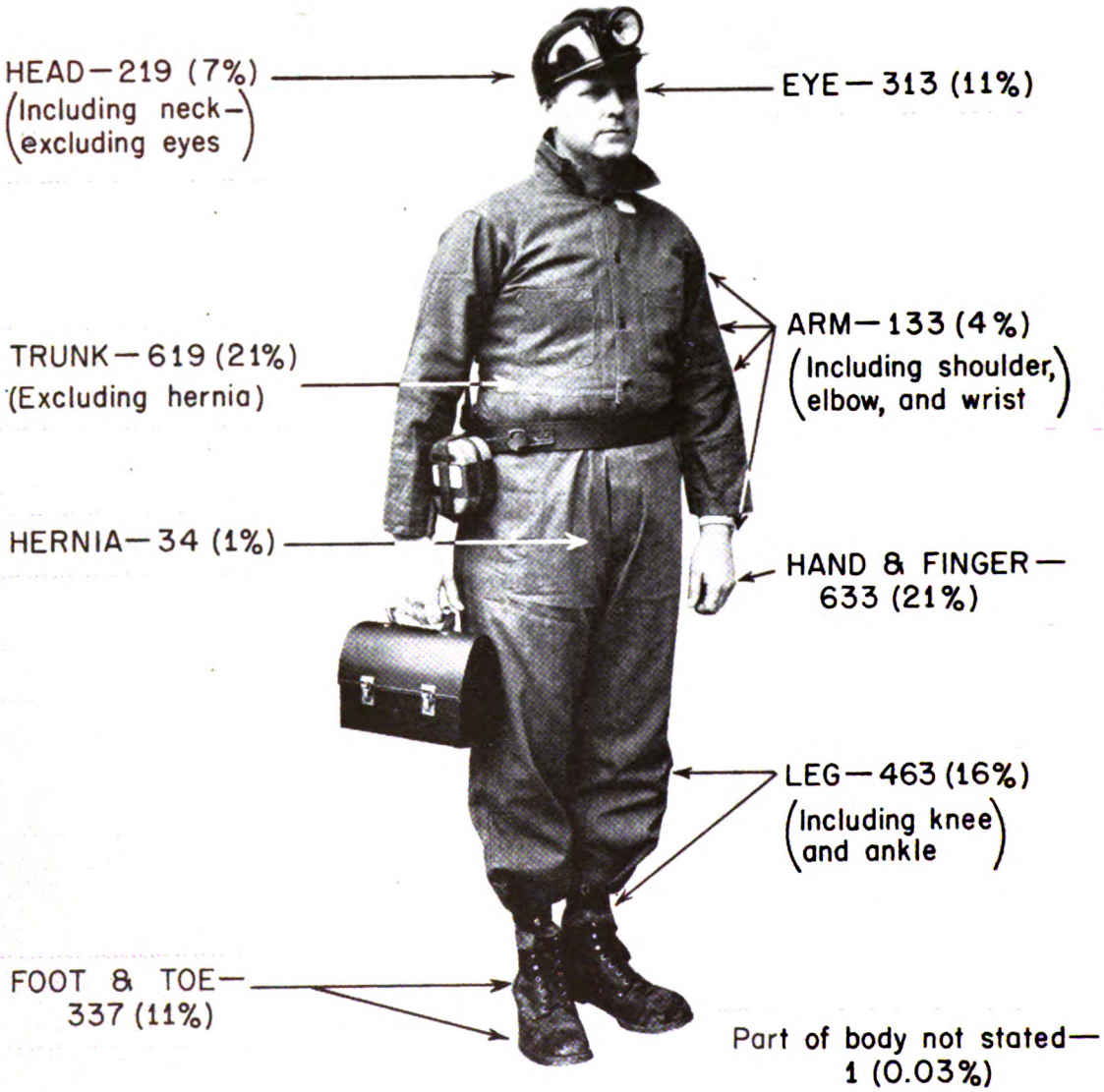

FIGURE 2.—Distribution of Nonfatal Injuries by Part of Body Injured at Pennsylvania Anthracite Mines.

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Of the 62 fatal injuries reported by the anthracite industry, 25 (40 percent) resulted from head injuries; 19 (31 percent) from trunk (excluding hernia); 15 (24 percent) from multiple; 2 (3 percent) from leg and ankle; and 1 (2 percent) not stated.

A total of 2,972 nonfatal lost-time injuries at anthracite mines was distributed as follows: Head (including neck), 219 (7 percent); eye, 313 (11 percent); trunk (excluding hernia), 619 (21 percent); hernia, 34 (1 percent); arm (including shoulder, elbow, and wrist), 133 (4 percent); hand and finger, 633 (21 percent); leg (including knee and ankle), 463 (16 percent); foot and toe, 337 (11 percent); multiple, 220 (7 percent); and 1 for which part of body was not stated. (See fig. 2.)

A total of 192 fatal and 8,099 nonfatal injuries occurred at rates of 1.07 and 45.02, respectively, at underground bituminous-coal mines where all coal was loaded mechanically. At mines where all coal was hand loaded there were 40 fatalities and 1,097 nonfatal injuries, which occurred at rates of 1.59 and 43.71, respectively.

At underground anthracite mines where all coal was loaded mechanically 4 fatal and 53 nonfatal injuries were reported. These injuries occurred at frequency rates of 4.46 and 59.07, respectively. Ten deaths and 233 nonfatal injuries resulted in rates of 2.34 and 54.57 per million man-hours of exposure at mines in which all coal was hand loaded.

In the bituminous-coal industry 4,577 underground mines, employing less than 15 men each, reported 59 fatal and 1,307 nonfatal injuries, which resulted in the respective rates of 2.21 and 48.93 per million man-hours of exposure to the hazards of coal mining. At underground operations a group of 36 mines employing 600 or more men each had the lowest combined frequency rate of injuries. The 25 fatalities reported by this group occurred at a rate of 0.53 while the 1,166 nonfatal injuries resulted in 24.67.

At stripping operations 1,461 mines, or 88 percent of the total, reported 16 fatalities (100 percent) and 787 nonfatal injuries or 67 percent of the total reported at bituminous strip pits. The 1 mine in the group of the stripping series employing 250 to 299 men attained the best injury frequency record, having no fatal injuries and 3 nonfatal injuries, which resulted in a rate of 5.76 injuries per million man-hours.

The 139 underground anthracite operations employing less than 15 men each reported 15 fatal and 59 nonfatal injuries, resulting in a fatality frequency rate of 10.98 and a nonfatal rate of 43.21. One underground mine employing 164 men was injury-free in 1954. The second best record was attained by the 50 mines employing 5 to 9 men each—1 fatality at a rate of 2.04 and 12 nonfatal injuries resulting in a rate of 24.49.

Sixty-two, or 48 percent of the total, strip mines in the anthracite industry reported 6 fatalities and 105, or 66 percent, of the 160 nonfatal injuries. Four mines (2 with a daily workforce of 100 to 124 men and 2 with 125 to 149 men) employing 465 men attained an injury-free record.

The 48 underground bituminous-coal mines, which produced 750,000 to 999,999 tons each during 1954, attained the lowest injury frequency record—1.27 fatalities and 31.68 nonfatal injuries per million man-hours. The 249 mines producing from 100,000 to 249,999 tons each had the highest combined rate (60.16).

Ten bituminous strip mines producing 1,000,000 or more tons each had the lowest frequency rates (fatal and nonfatal) of the production groups in strip mines, while the highest rates were recorded for 1,036 mines that produced 25,000 tons or less during the year.

The 190 underground anthracite mines that produced 25,000 tons or less in 1954 had the lowest injury frequency record of the underground production groups, while the 27 mines producing from 100,000 to 249,999 tons had the highest record.

At stripping operations the 5 mines producing from 250,000 to 499,999 tons each had the lowest injury frequency experience. These mines had no fatalities and the 14 nonfatal injuries reported occurred at the rate of 19.30 injuries per million man-hours. The highest injury frequency record in the stripping production groups—1.81 fatalities and 43.46 nonfatal injuries per million man-hours—was for 39 mines producing 25,000 tons or less per year.

DESCRIPTION OF DATA

The data in this publication were compiled from reports furnished by bituminous-coal (including lignite) and anthracite producers on two questionnaires of the Bureau of Mines, Form 6–1420, "Employer's Report of Coal-Mine Injury," and Form 6–1420A, "Coal-Mine Injuries and Employment." Exposure, tonnage, and operating data were reported monthly from mines employing 20 or more men daily and annually from mines employing less than 20 men. Injury and employment data cover all men at an operation who were engaged in production, maintenance, and repair work, including supervisory and technical personnel. Data on office force, coke workers, and employees in stores or affiliated industries are excluded. The companies report actual man-hours and man-days of work on productive and nonproductive

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days. Man-hour data are reported on a portal-to-portal basis, which includes working time, travel time, and lunch time. The average number of men working daily is calculated by dividing the number of active or productive days into the reported man-days of work. It is lower than a count of names on the payroll because absenteeism and turnover are taken into consideration. The average employment figure in the Bureau's monthly publication, "Coal - Mine Injuries and Employment," is somewhat lower than the annual figure (particularly that relating to the anthracite industry for 1954) because inactive or nonproductive days are also used in the calculations.

Injury data were obtained from analysis of descriptive reports, furnished by the producers, of each disabling injury. A disabling injury is one that results in death or permanent impairment or causes loss of time, beyond the day of injury, from a regularly established job at the mines.

Days of disability for temporary injuries were found by counting calendar days, beginning with the day following the date of injury and ending with the day before the injured employee returned to work. Permanent partial, permanent total, and fatal injuries were charged with days of disability according to the standard scale of time charges of the American Standards Association.

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GENERAL INJURY DATA, 1953–54

TABLE 1.—*Salient statistics on injuries, injury rates, employment, production, and productivity at coal mines in the United States, 1950-54*

	1950	1951	1952	1953	1954
BITUMINOUS-COAL MINES					
Number of injuries:					
Fatal	550	684	449	397	334
Nonfatal	28,390	28,081	23,719	20,112	14,746
Total	28,940	28,765	24,168	20,509	15,080
Injury rates:					
Frequency per million man-hours:					
Fatal	0.92	1.16	0.90	0.89	0.99
Nonfatal	47.73	47.56	47.64	45.26	43.66
Frequency per million tons:					
Fatal	1.06	1.28	0.96	0.87	0.85
Nonfatal	54.82	52.67	50.53	44.12	37.62
Time loss per thousand man-hours:					
Fatal	5.55	6.95	5.41	5.36	5.93
Nonfatal	2.88	3.10	3.00	2.68	2.57
Time loss per thousand tons:					
Fatal	6.37	7.70	5.74	5.22	5.11
Nonfatal	3.30	3.43	3.18	2.61	2.21
Average severity (days lost per injury):					
Permanent partial	701.3	738.9	673.6	708.1	678.7
Temporary total	34.4	34.9	36.9	35.6	35.3
All injuries	173.1	206.2	173.2	174.2	190.3
Men working daily	408,623	372,138	338,719	295,425	241,919
Man-hours worked	594,835,875	590,406,393	497,914,065	444,318,839	337,727,219
Production (short tons)	517,878,645	533,131,784	469,372,619	455,885,461	391,952,497
Productivity:					
Tons per man-hour	0.87	0.90	0.94	1.03	1.16
Tons per man-day	6.86	7.12	7.45	8.10	9.17
ANTHRACITE MINES					
Number of injuries:					
Fatal	93	101	99	64	62
Nonfatal	8,874	7,472	6,355	4,146	2,972
Total	8,967	7,573	6,454	4,210	3,034
Injury rates:					
Frequency per million man-hours:					
Fatal	0.80	0.95	1.03	0.92	1.23
Nonfatal	76.14	69.94	66.35	59.85	59.18
Frequency per million tons:					
Fatal	2.09	2.41	2.44	2.10	2.14
Nonfatal	199.75	178.63	156.55	135.85	102.72
Time loss per thousand man-hours:					
Fatal	4.79	5.67	6.20	5.54	7.41
Nonfatal	2.50	2.79	2.37	2.06	2.66
Time loss per thousand tons:					
Fatal	12.56	14.49	14.63	12.58	12.86
Nonfatal	6.55	7.12	5.59	4.69	4.63
Average severity (days lost per injury):					
Permanent partial	952.4	808.0	680.9	538.8	850.3
Temporary total	23.8	26.1	24.6	25.4	26.5
All injuries	94.7	119.3	127.2	125.2	166.7
Men working daily	74,616	69,767	62,610	55,701	41,786
Man-hours worked	116,553,682	106,841,000	95,784,245	69,274,699	50,222,996
Production (short tons)	44,426,379	41,828,328	40,594,518	30,518,359	28,932,659
Productivity:					
Ton per man-hour	0.38	0.39	0.42	0.44	0.58
Tons per man-day	2.83	2.89	3.13	3.25	4.23

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TABLE 1.—*Salient statistics on injuries, injury rates, employment, production, and productivity at coal mines in the United States, 1950–54*—Continued

	1950	1951	1952	1953	1954
ALL COAL MINES					
Number of injuries:					
Fatal	643	785	548	461	396
Nonfatal	37,264	35,553	30,074	24,258	17,718
Total	37,907	36,338	30,622	24,719	18,114
Injury rates:					
Frequency per million man-hours:					
Fatal	0.90	1.13	0.92	0.90	1.02
Nonfatal	52.38	50.99	50.66	47.23	45.67
Frequency per million tons:					
Fatal	1.14	1.37	1.07	0.95	0.94
Nonfatal	66.27	61.84	58.97	49.87	42.10
Time loss per thousand man-hours:					
Fatal	5.42	6.76	5.54	5.39	6.12
Nonfatal	2.81	3.05	2.90	2.60	2.58
Time loss per thousand tons:					
Fatal	6.86	8.19	6.45	5.69	5.65
Nonfatal	3.56	3.70	3.37	2.74	2.38
Average severity (days lost per injury):					
Permanent partial	720.9	746.1	674.2	693.9	702.8
Temporary total	31.8	33.1	34.2	33.8	33.8
All injuries	154.6	188.1	163.5	165.9	186.4
Men working daily	483,239	441,905	401,329	351,126	283,705
Man-hours worked	711,389,557	697,247,393	593,698,310	513,593,538	387,950,215
Production (short tons)	562,305,024	574,960,112	509,967,137	486,403,820	420,885,156
Productivity:					
Tons per man-hour	0.79	0.82	0.86	0.95	1.08
Tons per man-day	6.16	6.43	6.71	7.40	8.49

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TABLE 2.—*Employment, production, and productivity (short tons per man-hour) data on coal mines in the United States, by kind of coal and type of mining, 1953*

	Men working[1]	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
Bituminous-coal mines:							
Underground mines:							
Underground	216,161	190	40,979,221	327,796,823	349,294,001	1.07	6,783
Surface	49,748	190	9,454,119	70,270,114			
Total	265,909	190	50,433,340	398,066,937	349,294,001	.88	6,783
Strip mines	29,516	199	5,860,834	46,251,902	106,591,460	2.30	1,827
Total	295,425	191	56,294,174	444,318,839	455,885,461	1.03	8,610
Pennsylvania anthracite mines:							
Underground mines:							
Underground	34,377	163	5,608,416	41,445,701	18,033,423	.44	343
Surface[2]	14,746	169	2,493,411	18,589,392			
Total	49,123	165	8,101,827	60,035,093	18,033,423	.30	343
Strip mines	5,793	198	1,146,810	8,153,950	9,937,358	1.22	159
Washeries	667	172	114,657	836,046	2,259,517	2.70	36
Dredges	118	258	30,430	249,610	288,061	1.15	11
Total	55,701	169	9,393,724	69,274,699	30,518,359	.44	549
All coal mines:							
Underground mines:							
Underground	250,538	186	46,587,637	369,242,524	367,327,424	.99	7,126
Surface	64,494	185	11,947,530	88,859,506			
Total	315,032	186	58,535,167	458,102,030	367,327,424	.80	7,126
Strip mines	35,309	198	7,007,644	54,405,852	116,528,818	2.14	1,986
Washeries	667	172	114,657	836,046	2,259,517	2.70	36
Dredges	118	258	30,430	249,610	288,061	1.15	11
Total	351,126	187	65,687,898	513,593,538	486,403,820	.95	9,159

[1] Average number of men at work each day mine was active. Because absenteeism and labor turnover are taken into consideration, this number is lower than number available for work as measured by a count of names on payroll.

[2] Includes all man-hours worked in breakers. As a large part of strip and culm-bank anthracite is prepared in breakers, the productivity for anthracite underground mines is slightly low and for anthracite strip and culm-bank operations is slightly high. Effects of this condition on the productivity data for total coal are negligible.

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TABLE 3.—*Employment, production, and productivity (short tons per man-hour) data on coal mines in the United States, by kind of coal and type of mining, 1954*

	Men working [1]	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
Bituminous-coal mines:							
Underground mines:							
Underground	173,998	174	30,258,960	241,975,814	290,521,320	1.20	6,270
Surface	42,431	175	7,419,354	55,550,372			
Total	216,429	174	37,678,314	297,526,186	290,521,320	.98	6,270
Strip mines	25,490	200	5,087,056	40,201,033	101,431,177	2.52	1,664
Total	241,919	177	42,765,370	337,727,219	391,952,497	1.16	7,934
Pennsylvania anthracite mines:							
Underground mines:							
Underground	24,621	159	3,920,942	28,873,117	15,496,561	.54	289
Surface [2]	11,578	169	1,961,086	14,558,885			
Total	36,199	162	5,882,028	43,432,002	15,496,561	.36	289
Strip mines	4,977	171	850,826	6,062,054	9,735,754	1.61	128
Washeries	507	150	76,195	539,309	3,236,493	6.00	28
Dredges	103	226	23,309	189,631	463,851	2.45	6
Total	41,786	164	6,832,358	50,222,996	28,932,659	.58	451
All coal mines:							
Underground mines:							
Underground	198,619	172	34,179,902	270,848,931	306,017,881	1.13	6,559
Surface	54,009	174	9,380,440	70,109,257			
Total	252,628	172	43,560,342	340,958,188	306,017,881	.90	6,559
Strip mines	30,467	195	5,937,882	46,263,087	111,166,931	2.40	1,792
Washeries	507	150	76,195	539,309	3,236,493	6.00	28
Dredges	103	226	23,309	189,631	463,851	2.45	6
Total	283,705	175	49,597,728	387,950,215	420,885,156	1.08	8,385

[1] Average number of men at work each day mine was active. Because absenteeism and labor turnover are taken into consideration, this number is lower than the number available for work as measured by a count of names on payroll.

[2] Includes all man-hours worked in breakers. As a large part of strip and culm-bank anthracite is prepared in breakers, the productivity for anthracite underground mines is slightly low and for anthracite strip and culm-bank operations is slightly high. Effects of this condition on the productivity data for total coal are negligible.

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TABLE 4.—*Injury experience at bituminous-coal mines in the United States, by place of work, 1953*

	Underground mines			Strip mines	Total
	Underground	Surface	Total		
Number of injuries:					
Fatal	349	27	376	21	397
Nonfatal:					
Permanent total	17	1	18	----	18
Permanent partial	438	75	513	35	548
Temporary total	16,456	1,800	18,256	1,290	19,546
Total nonfatal	16,911	1,876	18,787	1,325	20,112
Grand total	17,260	1,903	19,163	1,346	20,509
Days lost:					
Fatal	2,094,000	162,000	2,256,000	126,000	2,382,000
Nonfatal:					
Permanent total	102,000	6,000	108,000	----	108,000
Permanent partial	316,253	44,563	360,816	27,226	388,042
Temporary total	612,252	52,817	665,069	29,995	695,064
Total nonfatal	1,030,505	103,380	1,133,885	57,221	1,191,106
Grand total	3,124,505	265,380	3,389,885	183,221	3,573,106
Frequency rates:[1]					
Per million man-hours:					
Fatal	1.06	0.38	0.94	0.45	0.89
Nonfatal	51.59	26.70	47.20	28.65	45.26
All injuries	52.65	27.08	48.14	29.10	46.16
Per million tons:					
Fatal	1.00	----	1.08	.20	.87
Nonfatal	48.41	----	53.79	12.43	44.12
All injuries	49.41	----	54.86	12.63	44.99
Time-loss rates:					
Per thousand man-hours:					
Fatal	6.39	2.31	5.67	2.72	5.36
Nonfatal	3.14	1.47	2.85	1.24	2.68
All injuries	9.53	3.78	8.52	3.96	8.04
Per thousand tons:					
Fatal	5.99	----	6.46	1.18	5.22
Nonfatal	2.95	----	3.25	.54	2.61
All injuries	8.95	----	9.70	1.72	7.84
Average severity:[2]					
Permanent partial	722.0	594.2	703.3	777.9	708.1
Temporary total	37.2	29.3	36.4	23.3	35.6
All injuries[3]	181.0	139.5	176.9	136.1	174.2

[1] All injury data are calculated separately, and total rates may differ slightly from the sums of the component rates. For man-hour and production data, see table 2.

[2] Average number of days lost per injury.

[3] Includes data for fatalities and permanent total disabilities, which have a standard time-loss charge of 6,000 days each.

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TABLE 5.—*Injury experience at bituminous-coal mines in the United States, by place of work, 1954*

	Underground mines			Strip mines	Total
	Underground	Surface	Total		
Number of injuries:					
Fatal	291	27	318	16	334
Nonfatal:					
Permanent total	11	1	12	2	14
Permanent partial	344	48	392	17	409
Temporary total	11,756	1,404	13,160	1,163	14,323
Total nonfatal	12,111	1,453	13,564	1,182	14,746
Grand total	12,402	1,480	13,882	1,198	15,080
Days lost:					
Fatal	1,746,000	162,000	1,908,000	96,000	2,004,000
Nonfatal:					
Permanent total	66,000	6,000	72,000	12,000	84,000
Permanent partial	234,932	28,313	263,245	14,325	277,570
Temporary total	435,263	41,830	477,093	27,800	504,893
Total nonfatal	736,195	76,143	812,338	54,125	866,463
Grand total	2,482,195	238,143	2,720,338	150,125	2,870,463
Frequency rates:[1]					
Per million man-hours:					
Fatal	1.20	0.49	1.07	0.40	0.99
Nonfatal	50.05	26.16	45.59	29.40	43.66
All injuries	51.25	26.64	46.66	29.80	44.65
Per million tons:					
Fatal	1.00	----------	1.09	.16	.85
Nonfatal	41.69	----------	46.69	11.65	37.62
All injuries	42.69	----------	47.78	11.81	38.47
Time-loss rates:					
Per thousand man-hours:					
Fatal	7.22	2.92	6.41	2.39	5.93
Nonfatal	3.04	1.37	2.73	1.35	2.57
All injuries	10.26	4.29	9.14	3.73	8.50
Per thousand tons:					
Fatal	6.01	----------	6.57	.95	5.11
Nonfatal	2.53	----------	2.80	.53	2.21
All injuries	8.54	----------	9.36	1.48	7.32
Average severity:[2]					
Permanent partial	682.9	589.9	671.5	842.6	678.7
Temporary total	37.0	29.8	36.3	23.9	35.3
All injuries[3]	200.1	196.0	196.0	125.3	190.3

[1] All injury data are calculated separately, and total rates may differ slightly from the sums of the component rates. For man-hour and production data, see table 3.

[2] Average number of days lost per injury.

[3] Includes data for fatalities and permanent total disabilities, which have a standard time-loss charge of 6,000 days each.

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TABLE 6.—*Injury experience at Pennsylvania anthracite mines, by place of work, 1953*

	Underground mines			Strip mines	Washeries	Dredges	Total
	Underground	Surface	Total				
Number of injuries:							
Fatal	60	4	64				64
Nonfatal:							
Permanent total	2		2				2
Permanent partial	34	9	43	7			50
Temporary total	3,331	459	3,790	272	24	8	4,094
Total nonfatal	3,367	468	3,835	279	24	8	4,146
Grand total	3,427	472	3,899	279	24	8	4,210
Days lost:							
Fatal	360,000	24,000	384,000				384,000
Nonfatal:							
Permanent total	12,000		12,000				12,000
Permanent partial	20,038	4,125	24,163	2,775			26,938
Temporary total	85,833	11,671	97,504	6,031	439	91	104,065
Total nonfatal	117,871	15,796	133,667	8,806	439	91	143,003
Grand total	477,871	39,796	517,667	8,806	439	91	527,003
Frequency rates:[1]							
Per million man-hours:							
Fatal	1.45	0.22	1.07				0.92
Nonfatal	81.24	25.18	63.88	34.22	28.71	32.05	59.85
All injuries	82.69	25.39	64.95	34.22	28.71	32.05	60.77
Per million tons:							
Fatal	3.33		3.55				2.10
Nonfatal	186.71		212.66	28.08	10.62	27.77	135.85
All injuries	190.04		216.21	28.08	10.62	27.77	137.95
Time-loss rates:							
Per thousand man-hours:							
Fatal	8.69	1.29	6.40				5.54
Nonfatal	2.84	.85	2.23	1.08	.53	.36	2.06
All injuries	11.53	2.14	8.62	1.08	.53	.36	7.61
Per thousand tons:							
Fatal	19.96		21.29				12.58
Nonfatal	6.54		7.41	.89	.19	.32	4.69
All injuries	26.50		28.71	.89	.19	.32	17.27
Average severity:[2]							
Permanent partial	589.4	458.3	561.9	396.4			538.8
Temporary total	25.8	25.4	25.7	22.2	18.3	11.4	25.4
All injuries[3]	139.4	84.3	132.8	31.6	18.3	11.4	125.2

[1] All injury rates are calculated separately, and total rates may differ slightly from the sums of the component rates. For man-hour and production data, see table 2.

[2] Average number of days lost per injury.

[3] Includes data for fatalities and permanent total disabilities, which have a standard time-loss charge of 6,000 days each.

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TABLE 7.—*Injury experience at Pennsylvania anthracite mines, by place of work, 1954*

	Underground mines			Strip mines	Washeries	Dredges	Total
	Underground	Surface	Total				
Number of injuries:							
Fatal	51	5	56	6	----	----	62
Nonfatal:							
Permanent total	----	----	----	----	----	----	----
Permanent partial	48	16	64	3	----	----	67
Temporary total	2,404	328	2,732	157	11	5	2,905
Total nonfatal	2,452	344	2,796	160	11	5	2,972
Grand total	2,503	349	2,852	166	11	5	3,034
Days lost:							
Fatal	306,000	30,000	336,000	36,000	----	----	372,000
Nonfatal:							
Permanent total	----	----	----	----	----	----	----
Permanent partial	43,525	11,063	54,588	2,381	----	----	56,969
Temporary total	64,282	8,238	72,520	4,108	144	78	76,850
Total nonfatal	107,807	19,301	127,108	6,489	144	78	133,819
Grand total	413,807	49,301	463,108	42,489	144	78	505,819
Frequency rates:[1]							
Per million man-hours:							
Fatal	1.77	0.34	1.29	0.99	----	----	1.23
Nonfatal	84.92	23.63	64.38	26.39	20.40	26.37	59.18
All injuries	86.69	23.97	65.67	27.38	20.40	26.37	60.41
Per million tons:							
Fatal	3.29	----	3.61	.62	----	----	2.14
Nonfatal	158.23	----	180.43	16.43	3.40	10.78	102.72
All injuries	161.52	----	184.04	17.05	3.40	10.78	104.86
Time-loss rates:							
Per thousand man-hours:							
Fatal	10.60	2.06	7.74	5.94	----	----	7.41
Nonfatal	3.73	1.33	2.93	1.07	.27	.41	2.66
All injuries	14.33	3.39	10.66	7.01	.27	.41	10.07
Per thousand tons:							
Fatal	19.75	----	21.68	3.70	----	----	12.86
Nonfatal	6.96	----	8.20	.67	.04	.17	4.63
All injuries	26.70	----	29.88	4.36	.04	.17	17.48
Average severity:[2]							
Permanent partial	906.8	691.4	852.9	793.7	----	----	850.3
Temporary total	26.7	25.1	26.5	26.2	13.1	15.6	26.5
All injuries[3]	165.3	141.3	162.4	256.0	13.1	15.6	166.7

[1] All injury rates are calculated separately, and total rates may differ slightly from the sums of the component rates. For man-hour and production data, see table 3.

[2] Average number of days lost per injury.

[3] Includes data for fatalities and permanent total disabilities, which have a standard time-loss charge of 6,000 days each.

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TABLE 8.—*Injury experience at all coal mines in the United States, by place of work, 1953*

	Underground mines			Strip mines	Washeries	Dredges	Total
	Underground	Surface	Total				
Number of injuries:							
Fatal	409	31	440	21	----	----	461
Nonfatal:							
Permanent total	19	1	20	----	----	----	20
Permanent partial	472	84	556	42	----	----	598
Temporary total	19,787	2,259	22,046	1,562	24	8	23,640
Total nonfatal	20,278	2,344	22,622	1,604	24	8	24,258
Grand total	20,687	2,375	23,062	1,625	24	8	24,719
Days lost:							
Fatal	2,454,000	186,000	2,640,000	126,000	----	----	2,766,000
Nonfatal:							
Permanent total	114,000	6,000	120,000	----	----	----	120,000
Permanent partial	336,291	48,688	384,979	30,001	----	----	414,980
Temporary total	698,085	64,488	762,573	36,026	439	91	799,129
Total nonfatal	1,148,376	119,176	1,267,552	66,027	439	91	1,334,109
Grand total	3,602,376	305,176	3,907,552	192,027	439	91	4,100,109
Frequency rates:[1]							
Per million man-hours:							
Fatal	1.11	0.35	0.96	0.39	----	----	0.90
Nonfatal	54.92	26.38	49.38	29.48	28.71	32.05	47.23
All injuries	56.03	26.73	50.34	29.87	28.71	32.05	48.13
Per million tons:							
Fatal	1.11	----	1.20	.18	----	----	.95
Nonfatal	55.20	----	61.59	13.76	10.62	27.77	49.87
All injuries	56.32	----	62.78	13.95	10.62	27.77	50.82
Time-loss rates:							
Per thousand man-hours:							
Fatal	6.65	2.09	5.76	2.32	----	----	5.39
Nonfatal	3.11	1.34	2.77	1.21	.53	.36	2.60
All injuries	9.76	3.43	8.53	3.53	.53	.36	7.98
Per thousand tons:							
Fatal	6.68	----	7.19	1.08	----	----	5.69
Nonfatal	3.13	----	3.45	.57	.19	.32	2.74
All injuries	9.81	----	10.64	1.65	.19	.32	8.43
Average severity:[2]							
Permanent partial	712.5	579.6	692.4	714.3	----	----	693.9
Temporary total	35.3	28.5	34.6	23.1	18.3	11.4	33.8
All injuries[3]	174.1	128.5	169.4	118.2	18.3	11.4	165.9

[1] All injury rates are calculated separately, and total rates may differ slightly from the sums of the component rates. For man-hour and production data, see table 2.

[2] Average number of days lost per injury.

[3] Includes data for fatalities and permanent total disabilities, which have a standard time-loss charge of 6,000 days each.

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TABLE 9.—*Injury experience at all coal mines in the United States, by place of work, 1954*

	Underground mines			Strip mines	Washeries	Dredges	Total
	Underground	Surface	Total				
Number of injuries:							
Fatal	342	32	374	22	----------	----------	396
Nonfatal:							
Permanent total	11	1	12	2	----------	----------	14
Permanent partial	392	64	456	20	----------	----------	476
Temporary total	14,160	1,732	15,892	1,320	11	5	17,228
Total nonfatal	14,563	1,797	16,360	1,342	11	5	17,718
Grand total	14,905	1,829	16,734	1,364	11	5	18,114
Days lost:							
Fatal	2,052,000	192,000	2,244,000	132,000	----------	----------	2,376,000
Nonfatal:							
Permanent total	66,000	6,000	72,000	12,000	----------	----------	84,000
Permanent partial	278,457	39,376	317,833	16,706	----------	----------	334,539
Temporary total	499,545	50,068	549,613	31,908	144	78	581,743
Total nonfatal	844,002	95,444	939,446	60,614	144	78	1,000,282
Grand total	2,896,002	287,444	3,183,446	192,614	144	78	3,376,282
Frequency rates:[1]							
Per million man-hours:							
Fatal	1.26	0.46	1.10	0.48	----------	----------	1.02
Nonfatal	53.77	25.63	47.98	29.01	20.40	26.37	45.67
All injuries	55.03	26.09	49.08	29.48	20.40	26.37	46.69
Per million tons:							
Fatal	1.12	----------	1.22	.20	----------	----------	.94
Nonfatal	47.59	----------	53.46	12.07	3.40	10.78	42.10
All injuries	48.71	----------	54.68	12.27	3.40	10.78	43.04
Time-loss rates:							
Per thousand man-hours:							
Fatal	7.58	2.74	6.58	2.85	----------	----------	6.12
Nonfatal	3.12	1.36	2.76	1.31	.27	.41	2.58
All injuries	10.69	4.10	9.34	4.16	.27	.41	8.70
Per thousand tons:							
Fatal	6.71	----------	7.33	1.19	----------	----------	5.65
Nonfatal	2.76	----------	3.07	.55	.04	.17	2.38
All injuries	9.46	----------	10.40	1.73	.04	.17	8.02
Average severity:[2]							
Permanent partial	710.3	615.3	697.0	835.3	----------	----------	702.8
Temporary total	35.3	28.9	34.6	24.2	13.1	15.6	33.8
All injuries[3]	194.3	157.2	190.2	141.2	13.1	15.6	186.4

[1] All injury rates are calculated separately, and total rates may differ slightly from the sums of the component rates. For man-hour and production data, see table 3.

[2] Average number of days lost per injury.

[3] Includes data for fatalities and permanent total disabilities, which have a standard time-loss charge of 6,000 days each.

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TABLE 10.—*Number of injuries and frequency and time-loss rates[1] at coal mines in the United States, by degree of injury, 1953*

Degree of injury	Bituminous-coal mines			Pennsylvania anthracite mines			All coal mines		
	Number of injuries	Injury rates		Number of injuries	Injury rates		Number of injuries	Injury rates	
		Frequency	Time loss		Frequency	Time loss		Frequency	Time loss
Fatal	397	0.89	5.36	64	0.92	5.54	461	0.90	5.39
Permanent total	18	.04	.24	2	.03	.17	20	.04	.23
Permanent partial	548	1.23	.87	50	.72	.39	598	1.16	.81
Temporary total	19,546	43.99	1.56	4,094	59.10	1.50	23,640	46.03	1.56
Total nonfatal injuries	20,112	45.26	2.68	4,146	59.85	2.06	24,258	47.23	2.60
All injuries	20,509	46.16	8.04	4,210	60.77	7.61	24,719	48.13	7.98

[1] Frequency rate is the number of injuries per million man-hours; time-loss rate is the number of days of disability per thousand man-hours.

TABLE 11.—*Number of injuries and frequency and time-loss rates[1] at coal mines in the United States, by degree of injury, 1954*

Degree of injury	Bituminous-coal mines			Pennsylvania anthracite mines			All coal mines		
	Number of injuries	Injury rates		Number of injuries	Injury rates		Number of injuries	Injury rates	
		Frequency	Time loss		Frequency	Time loss		Frequency	Time loss
Fatal	334	0.99	5.93	62	1.23	7.41	396	1.02	6.12
Permanent total	14	.04	.25	-------	-------	-------	14	.04	.22
Permanent partial	409	1.21	.82	67	1.33	1.13	476	1.23	.86
Temporary total	14,323	42.41	1.49	2,905	57.84	1.53	17,228	44.41	1.50
Total nonfatal injuries	14,746	43.66	2.57	2,972	59.18	2.66	17,718	45.67	2.58
All injuries	15,080	44.65	8.50	3,034	60.41	10.07	18,114	46.69	8.70

[1] Frequency rate is the number of injuries per million man-hours; time-loss rate is the number of days of disability per thousand man-hours.

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SELECTED INJURY DATA, 1953–54

TABLE 12.—*Comparative fatal- and nonfatal-injury data on bituminous-coal mines in the United States, 1953*

	Mines reporting fatal accidents	Mines reporting no fatal accidents	All bituminous-coal mines
Number of mines	327	8,283	8,610
Production—short tons	123,180,570	332,704,891	455,885,461
Proportion of total tonnage—percent	27.0	73.0	100.0
Number of employees	75,536	219,889	295,425
Proportion of total employees—percent	25.6	74.4	100.0
Number of employees per mine	231	27	34
Man-days worked	16,204,960	40,089,214	56,294,174
Average days worked per man	215	182	191
Man-hours worked	127,794,263	316,524,576	444,318,839
Average hours worked per man	1,692	1,439	1,504
Production per man-hour—tons	0.96	1.05	1.03
Number of fatalities	397	----	397
Number of nonfatal injuries	5,978	14,134	20,112
Fatality rate per million man-hours	3.11	----	0.89
Nonfatal-injury rate per million man-hours	46.78	44.65	45.26

TABLE 13.—*Comparative fatal- and nonfatal-injury data on bituminous-coal mines in the United States, 1954*

	Mines reporting fatal accidents	Mines reporting no fatal accidents	All bituminous-coal mines
Number of mines	306	7,628	7,934
Production—short tons	92,573,334	299,379,163	391,952,497
Proportion of total tonnage—percent	23.6	76.4	100.0
Number of employees	54,924	186,995	241,919
Proportion of total employees—percent	22.7	77.3	100.0
Number of employees per mine	179	25	30
Man-days worked	11,126,866	31,638,504	42,765,370
Average days worked per man	203	169	177
Man-hours worked	87,831,504	249,895,715	337,727,219
Average hours worked per man	1,599	1,336	1,396
Production per man-hour—tons	1.05	1.20	1.16
Number of fatalities	334	----	334
Number of nonfatal injuries	3,641	11,105	14,746
Fatality rate per million man-hours	3.80	----	0.99
Nonfatal-injury rate per million man-hours	41.45	44.44	43.66

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TABLE 14.—*Comparative fatal- and nonfatal-injury data on Pennsylvania anthracite mines, 1953*

	Mines reporting fatal accidents	Mines reporting no fatal accidents	All anthracite mines
Number of mines	58	491	549
Production—short tons	7,636,031	22,882,328	30,518,359
Proportion of total tonnage—percent	25.0	75.0	100.0
Number of employees	20,093	35,608	55,701
Proportion of total employees—percent	36.1	63.9	100.0
Number of employees per mine	346	73	101
Man-days worked	3,389,869	6,003,855	9,393,724
Average days worked per man	169	169	169
Man-hours worked	25,283,364	43,991,335	69,274,699
Average hours worked per man	1,258	1,235	1,244
Production per man-hour—ton	0.30	0.52	0.44
Number of fatalities	64	----------	64
Number of nonfatal injuries	1,756	2,390	4,146
Fatality rate per million man-hours	2.53	----------	0.92
Nonfatal-injury rate per million man-hours	69.45	54.33	59.85

TABLE 15.—*Comparative fatal- and nonfatal-injury data on Pennsylvania anthracite mines, 1954*

	Mines reporting fatal accidents	Mines reporting no fatal accidents	All anthracite mines
Number of mines	50	401	451
Production—short tons	7,307,148	21,625,511	28,932,659
Proportion of total tonnage—percent	25.3	74.7	100.0
Number of employees	14,198	27,588	41,786
Proportion of total employees—percent	34.0	66.0	100.0
Number of employees per mine	284	69	93
Man-days worked	2,526,865	4,305,493	6,832,358
Average days worked per man	178	156	164
Man-hours worked	18,907,711	31,315,285	50,222,996
Average hours worked per man	1,332	1,135	1,202
Production per man-hour—ton	0.39	0.69	0.58
Number of fatalities	62	----------	62
Number of nonfatal injuries	1,332	1,640	2,972
Fatality rate per million man-hours	3.28	----------	1.23
Nonfatal-injury rate per million man-hours	70.45	52.37	59.18

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TABLE 16.—*Number of injuries at coal mines in the United States, by principal injury agencies, kind of coal, and general location, 1953*

Principal injury agency	Bituminous-coal mines		Pennsylvania anthracite mines		All coal mines	
	Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal
Underground mines:						
Underground:						
Falls of roof	224	2,936	36	340	260	3,276
Falls of face	9	887	6	291	15	1,178
Rushes of coal or rock	----------	39	1	100	1	139
Other falling objects	1	361	----------	75	1	436
Falls of persons	1	558	1	449	2	1,007
Handling materials	1	3,382	1	981	2	4,363
Handtools	----------	918	----------	276	----------	1,194
Stepping on objects	----------	226	----------	79	----------	305
Striking or bumping	1	77	----------	15	1	92
Haulage	74	3,817	2	406	76	4,223
Explosions (gas or dust)	9	10	5	15	14	25
Explosives	4	202	1	20	5	222
Electricity	12	551	2	23	14	574
Machinery	9	2,664	----------	190	9	2,854
Suffocation	----------	13	1	2	1	15
Mine fires	----------	17	----------	----------	----------	17
All other	----------	184	3	38	3	222
Total	345	16,842	59	3,300	404	20,142
Shaft and slope:						
Falls of roof or face	----------	----------	----------	1	----------	1
Other falling objects	----------	2	----------	8	----------	10
Falls of persons	----------	21	1	13	1	34
Handling materials	----------	9	----------	9	----------	18
Haulage	4	31	----------	31	4	62
Explosions (gas or dust)	----------	3	----------	----------	----------	3
All other	----------	3	----------	5	----------	8
Total	4	69	1	67	5	136
Total, underground	349	16,911	60	3,367	409	20,278
Surface:						
Falling objects	2	50	----------	22	2	72
Falls of persons	2	254	1	81	3	335
Handling materials	1	508	1	150	2	658
Handtools	----------	151	----------	24	----------	175
Haulage	13	544	1	106	14	650
Explosions (gas or dust)	----------	3	----------	----------	----------	3
Explosives	----------	1	----------	----------	----------	1
Electricity	4	49	----------	4	4	53
Machinery	4	165	1	31	5	196
All other	1	151	----------	50	1	201
Total	27	1,876	4	468	31	2,344
Total, underground mines	376	18,787	64	3,835	440	22,622
Strip mines:						
Falls of coal or overburden	5	44	----------	8	5	52
Other falling objects	----------	45	----------	8	----------	53
Falls of persons	----------	225	----------	52	----------	277
Handling materials	1	288	----------	57	1	345
Handtools	----------	92	----------	14	----------	106
Haulage	1	171	----------	57	1	228
Explosives	1	16	----------	4	1	20
Electricity	3	9	----------	1	3	10
Machinery	9	299	----------	63	9	362
All other	1	136	----------	15	1	151
Total	21	1,325	----------	279	21	1,604
Washeries	----------	----------	----------	24	----------	24
Dredges	----------	----------	----------	8	----------	8
Grand total	397	20,112	64	4,146	461	24,258

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TABLE 17.—*Number of injuries at coal mines in the United States, by principal injury agencies, kind of coal, and general location, 1954*

Principal injury agency	Bituminous-coal mines		Pennsylvania anthracite mines		All coal mines	
	Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal
Underground mines:						
Underground:						
Falls of roof	163	2,089	30	196	193	2,285
Falls of face	14	620	6	236	20	856
Rushes of coal or rock		14	3	106	3	120
Other falling objects		245		63		308
Falls of persons		359	2	311	2	670
Handling materials		2,245		734		2,979
Handtools		617		191		808
Stepping on objects		183		71		254
Striking or bumping		56		4		60
Haulage	62	2,819	6	288	68	3,107
Explosions (gas or dust)	17	22	1	14	18	36
Explosives	5	187		22	5	209
Electricity	11	406	1	20	12	426
Machinery	14	2,017		129	14	2,146
Suffocation		6		3		9
Mine fires	1	12			1	12
All other		143		19		162
Total	287	12,040	49	2,407	336	14,447
Shaft and slope:						
Falls of roof or face		6				6
Other falling objects		4		11		15
Falls of persons		9		9		18
Handling materials		4		3		7
Haulage	4	38	2	19	6	57
Explosions (gas or dust)						
All other		10		3		13
Total	4	71	2	45	6	116
Total, underground	291	12,111	51	2,452	342	14,563
Surface:						
Falling objects		30		8		38
Falls of persons	4	195	2	68	6	263
Handling materials	1	424		129	1	553
Handtools		104		23		127
Haulage	12	418	1	56	13	474
Explosions (gas or dust)	5	13			5	13
Explosives						
Electricity	1	36		2	1	38
Machinery	2	124		36	2	160
All other	2	109	2	22	4	131
Total	27	1,453	5	344	32	1,797
Total, underground mines	318	13,564	56	2,796	374	16,360
Strip mines:						
Falls of coal or overburden	3	36		5	3	41
Other falling objects	1	39		10	1	49
Falls of persons		206	1	27	1	233
Handling materials		258		38		296
Handtools		95		7		102
Haulage	2	173	3	25	5	198
Explosives	2	15		2	2	17
Electricity	3	6		2	3	8
Machinery	4	230	2	33	6	263
All other	1	124		11	1	135
Total	16	1,182	6	160	22	1,342
Washeries				11		11
Dredges				5		5
Grand total	334	14,746	62	2,972	396	17,718

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TABLE 18.—*Days of disability from injuries at coal mines in the United States, by principal injury agencies, kind of coal, and general location, 1953*

Principal injury agency	Bituminous-coal mines		Pennsylvania anthracite mines		All coal mines	
	Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal
Underground mines:						
Underground:						
Falls of roof	1,344,000	273,783	216,000	18,634	1,560,000	292,417
Falls of face	54,000	47,524	36,000	16,769	90,000	64,293
Rushes of coal or rock	----------	1,325	6,000	3,885	6,000	5,210
Other falling objects	6,000	15,414	----------	1,890	6,000	17,304
Falls of persons	6,000	17,910	6,000	10,857	12,000	28,767
Handling materials	6,000	114,509	6,000	22,418	12,000	136,927
Handtools	----------	23,984	----------	4,726	----------	28,710
Stepping on objects	----------	5,564	----------	1,733	----------	7,297
Striking or bumping	6,000	1,866	----------	419	6,000	2,285
Haulage	444,000	312,090	12,000	19,824	456,000	331,914
Explosions (gas or dust)	54,000	286	30,000	1,197	84,000	1,483
Explosives	24,000	23,768	6,000	4,335	30,000	28,103
Electricity	72,000	14,188	12,000	202	84,000	14,390
Machinery	54,000	166,917	----------	8,717	54,000	175,634
Suffocation	----------	135	6,000	4	6,000	139
Mine fires	----------	298	----------	----------	----------	298
All other	----------	5,145	18,000	312	18,000	5,457
Total	2,070,000	1,024,706	354,000	115,922	2,424,000	1,140,628
Shaft and slope:						
Falls of roof and face	----------	----------	----------	1	----------	1
Other falling objects	----------	275	----------	99	----------	374
Falls of persons	----------	493	6,000	308	6,000	801
Handling materials	----------	224	----------	264	----------	488
Haulage	24,000	4,767	----------	1,255	24,000	6,022
Explosions (gas or dust)	----------	8	----------	----------	----------	8
All other	----------	32	----------	22	----------	54
Total	24,000	5,799	6,000	1,949	30,000	7,748
Total, underground	2,094,000	1,030,505	360,000	117,871	2,454,000	1,148,376
Surface:						
Falling objects	12,000	1,231	----------	420	12,000	1,651
Falls of persons	12,000	9,896	6,000	2,214	18,000	12,110
Handling materials	6,000	13,655	6,000	3,896	12,000	17,551
Handtools	----------	5,259	----------	2,293	----------	7,552
Haulage	78,000	51,045	6,000	5,380	84,000	56,425
Explosions (gas or dust)	----------	137	----------	----------	----------	137
Explosives	----------	192	----------	----------	----------	192
Electricity	24,000	956	----------	80	24,000	1,036
Machinery	24,000	17,754	6,000	769	30,000	18,523
All other	6,000	3,255	----------	744	6,000	3,999
Total	162,000	103,380	24,000	15,796	186,000	119,176
Total, underground mines	2,256,000	1,133,885	384,000	133,667	2,640,000	1,267,552
Strip mines:						
Falls of coal or overburden	30,000	1,359	----------	603	30,000	1,962
Other falling objects	----------	1,032	----------	84	----------	1,116
Falls of persons	----------	4,300	----------	1,294	----------	5,594
Handling materials	6,000	8,484	----------	1,015	6,000	9,499
Handtools	----------	1,613	----------	135	----------	1,748
Haulage	6,000	7,986	----------	1,768	6,000	9,754
Explosives	6,000	339	----------	96	6,000	435
Electricity	18,000	197	----------	11	18,000	208
Machinery	54,000	29,473	----------	3,675	54,000	33,148
All other	6,000	2,438	----------	125	6,000	2,563
Total	126,000	57,221	----------	8,806	126,000	66,027
Washeries	----------	----------	----------	439	----------	439
Dredges	----------	----------	----------	91	----------	91
Grand total	2,382,000	1,191,106	384,000	143,003	2,766,000	1,334,109

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TABLE 19.—*Days of disability from injuries at coal mines in the United States, by principal injury agencies, kind of coal, and general location, 1954*

Principal injury agency	Bituminous-coal mines		Pennsylvania anthracite mines		All coal mines	
	Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal
Underground mines:						
Underground:						
Falls of roof	978,000	189,731	180,000	10,920	1,158,000	200,651
Falls of face	84,000	50,834	36,000	10,657	120,000	61,491
Rushes of coal or rock	----------	3,016	18,000	4,532	18,000	7,548
Other falling objects	----------	8,544	----------	1,471	----------	10,015
Falls of persons	----------	11,157	12,000	9,242	12,000	20,399
Handling materials	----------	68,452	----------	24,203	----------	92,655
Handtools	----------	15,339	----------	3,930	----------	19,269
Stepping on objects	----------	4,724	----------	826	----------	5,550
Striking or bumping	----------	1,346	----------	35	----------	1,381
Haulage	372,000	210,986	36,000	25,691	408,000	236,677
Explosions (gas or dust)	102,000	1,073	6,000	913	108,000	1,986
Explosives	30,000	8,275	----------	5,120	30,000	13,395
Electricity	66,000	6,146	6,000	270	72,000	6,416
Machinery	84,000	144,226	----------	7,727	84,000	151,953
Suffocation	----------	219	----------	30	----------	249
Mine fires	6,000	328	----------	----------	6,000	328
All other	----------	3,727	----------	303	----------	4,030
Total	1,722,000	728,123	294,000	105,870	2,016,000	833,993
Shaft and slope:						
Falls of roof and face	----------	469	----------	----------	----------	469
Other falling objects	----------	243	----------	800	----------	1,043
Falls of persons	----------	252	----------	190	----------	442
Handling materials	----------	130	----------	82	----------	212
Haulage	24,000	1,893	12,000	822	36,000	2,715
Explosions (gas or dust)	----------	----------	----------	----------	----------	----------
All other	----------	5,085	----------	43	----------	5,128
Total	24,000	8,072	12,000	1,937	36,000	10,009
Total, underground	1,746,000	736,195	306,000	107,807	2,052,000	844,002
Surface:						
Falling objects	----------	903	----------	60	----------	963
Falls of persons	24,000	6,367	12,000	1,823	36,000	8,190
Handling materials	6,000	14,949	----------	3,782	6,000	18,731
Handtools	----------	3,934	----------	443	----------	4,377
Haulage	72,000	30,088	6,000	8,326	78,000	38,414
Explosions (gas or dust)	30,000	1,545	----------	----------	30,000	1,545
Explosives	----------	----------	----------	----------	----------	----------
Electricity	6,000	663	----------	60	6,000	723
Machinery	12,000	14,048	----------	4,303	12,000	18,351
All other	12,000	3,646	12,000	504	24,000	4,150
Total	162,000	76,143	30,000	19,301	192,000	95,444
Total, underground mines	1,908,000	812,338	336,000	127,108	2,244,000	939,446
Strip mines:						
Falls of coal or overburden	18,000	760	----------	210	18,000	970
Other falling objects	6,000	1,237	----------	805	6,000	2,042
Falls of persons	----------	6,423	6,000	974	6,000	7,397
Handling materials	----------	4,915	----------	836	----------	5,751
Handtools	----------	1,424	----------	71	----------	1,495
Haulage	12,000	14,655	18,000	374	30,000	15,029
Explosives	12,000	291	----------	34	12,000	325
Electricity	18,000	43	----------	34	18,000	77
Machinery	24,000	21,539	12,000	2,812	36,000	24,351
All other	6,000	2,838	----------	339	6,000	3,177
Total	96,000	54,125	36,000	6,489	132,000	60,614
Washeries	----------	----------	----------	144	----------	144
Dredges	----------	----------	----------	78	----------	78
Grand total	2,004,000	866,463	372,000	133,819	2,376,000	1,000,282

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TABLE 20.—*Average severity of all injuries at coal mines in the United States, by principal injury agencies, kind of coal, and general location, 1953*[1]

Principal injury agency	Bituminous-coal mines	Pennsylvania anthracite mines	All coal mines
Underground mines:			
Underground:			
Falls of roof	512.0	624.0	523.9
Falls of face	113.3	177.7	129.3
Rushes of coal or rock	34.0	97.9	80.1
Other falling objects	59.2	25.2	53.3
Falls of persons	42.8	37.5	40.4
Handling materials	35.6	28.9	34.1
Handtools	26.1	17.1	24.0
Stepping on objects	24.6	21.9	23.9
Striking or bumping	100.8	27.9	89.1
Haulage	194.3	78.0	183.3
Explosions (gas or dust)	2,857.2	1,559.9	2,191.9
Explosives	231.9	492.1	256.0
Electricity	153.1	488.1	167.3
Machinery	82.6	45.9	80.2
Suffocation	10.4	2,001.3	383.7
Mine fires	17.5	----	17.5
All other	28.0	446.6	104.3
Total	180.1	139.9	173.5
Shaft and slope:			
Falls of roof and face	----	1.0	1.0
Other falling objects	137.5	12.4	37.4
Falls of persons	23.5	450.6	194.3
Handling materials	24.9	29.3	27.1
Haulage	821.9	40.5	454.9
Explosions (gas or dust)	2.7	----	2.7
All other	10.7	4.4	6.8
Total	408.2	116.9	267.7
Total, underground	181.0	139.4	174.1
Surface:			
Falling objects	254.4	19.1	184.5
Falls of persons	85.5	100.2	89.1
Handling materials	38.6	65.5	44.8
Handtools	34.8	95.5	43.2
Haulage	231.7	106.4	211.5
Explosions (gas or dust)	45.7	----	45.7
Explosives	192.0	----	192.0
Electricity	470.9	20.0	439.2
Machinery	247.1	211.5	241.4
All other	60.9	14.9	49.5
Total	139.5	84.3	128.5
Total, underground mines	176.9	132.8	169.4
Strip mines:			
Falls of coal or overburden	640.0	75.4	560.7
Other falling objects	22.9	10.5	21.1
Falls of persons	19.1	24.9	20.2
Handling materials	50.1	17.8	44.8
Handtools	17.5	9.6	16.5
Haulage	81.3	31.0	68.8
Explosives	372.9	24.0	306.4
Electricity	1,516.4	11.0	1,400.6
Machinery	271.0	58.3	234.9
All other	61.6	8.3	56.3
Total	136.1	31.6	118.2
Washeries	----	18.3	18.3
Dredges	----	11.4	11.4
Grand total	174.2	125.2	165.9

[1] Average severity is the number of days lost per injury. Basic data on number of injuries are listed in table 16; on days of disability, in table 18.

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TABLE 21.—*Average severity of all injuries at coal mines in the United States, by principal injury agencies, kind of coal, and general location, 1954*[1]

Principal injury agency	Bituminous-coal mines	Pennsylvania anthracite mines	All coal mines
Underground mines:			
Underground:			
Falls of roof	518.5	844.8	548.3
Falls of face	212.7	192.8	207.2
Rushes of coal or rock	215.4	206.7	207.7
Other falling objects	34.9	23.3	32.5
Falls of persons	31.1	67.9	48.2
Handling materials	30.5	33.0	31.1
Handtools	24.9	20.6	23.8
Stepping on objects	25.8	11.6	21.9
Striking or bumping	24.0	8.8	23.0
Haulage	202.4	209.8	203.0
Explosions (gas or dust)	2,642.9	460.9	2,036.8
Explosives	199.3	232.7	202.8
Electricity	173.0	298.6	179.0
Machinery	112.4	59.9	109.2
Suffocation	36.5	10.0	27.7
Mine fires	486.8		486.8
All other	26.1	15.9	24.9
Total	198.8	162.8	192.8
Shaft and slope:			
Falls of roof and face	78.2		78.2
Other falling objects	60.8	72.7	69.5
Falls of persons	28.0	21.1	24.6
Handling materials	32.5	27.3	30.3
Haulage	616.5	610.6	614.5
Explosions (gas or dust)			
All other	508.5	14.3	394.5
Total	427.6	296.5	377.1
Total, underground	200.1	165.3	194.3
Surface:			
Falling objects	30.1	7.5	25.3
Falls of persons	152.6	197.5	164.3
Handling materials	49.3	29.3	44.6
Handtools	37.8	19.3	34.5
Haulage	237.4	251.3	239.0
Explosions (gas or dust)	1,752.5		1,752.5
Explosives			
Electricity	180.1	30.0	172.4
Machinery	206.7	119.5	187.4
All other	141.0	521.0	208.5
Total	160.9	141.3	157.2
Total, underground mines	196.0	162.4	190.2
Strip mines:			
Falls of coal or overburden	481.0	42.0	431.1
Other falling objects	180.9	80.5	160.8
Falls of persons	31.2	249.1	57.3
Handling materials	19.1	22.0	19.4
Handtools	15.0	10.1	14.7
Haulage	152.3	656.2	221.8
Explosives	723.0	17.0	648.7
Electricity	2,004.8	17.0	1,643.4
Machinery	194.6	423.2	224.4
All other	70.7	30.8	67.5
Total	125.3	256.0	141.2
Washeries		13.1	13.1
Dredges		15.6	15.6
Grand total	190.3	166.7	186.4

[1] Average severity is the number of days lost per injury. Basic data on number of injuries are listed in table 17; on days of disability, in table 19.

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TABLE 22.—*Number and average severity of injuries at coal mines in the United States, by kind of coal, principal injury agencies, general location, and degree of injury, 1953*

Injury agency and general location	Bituminous-coal mines							Anthracite mines							All coal mines						
	Number of injuries				Average severity			Number of injuries				Average severity			Number of injuries				Average severity		
	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries
		Total	Partial						Total	Partial						Total	Partial				
UNDERGROUND MINES																					
Underground:																					
Falls of roof:																					
While mining	50	3	10	635	1,462.5	50.9	522.9	11	1	1	111	300.0	30.4	610.3	61	4	11	746	1,356.8	47.9	536.1
While loading	53	.....	12	988	712.5	61.3	367.7	10	.....	3	68	225.0	60.2	800.0	63	.....	15	1,056	615.0	61.2	398.5
While testing or taking down roof	14	2	3	250	2,600.0	46.0	428.6	2	.....	.....	16	.....	28.1	691.6	16	2	3	266	2,600.0	44.9	445.1
While setting or pulling timbers or props	50	1	6	393	2,118.8	60.9	761.5	8	.....	.....	88	.....	23.7	521.7	58	1	6	481	2,118.8	54.1	719.3
While preparing or installing roof bolts	1	1	3	114	1,500.0	47.9	184.6	.....	.....	.....	.....	.....	.....	.....	1	1	3	114	1,500.0	47.9	184.6
While moving machinery from one working place to another	6	.....	1	44	4,500.0	47.3	834.9	.....	.....	.....	.....	.....	.....	.....	6	.....	1	44	4,500.0	47.3	834.9
While moving or placing cars in active working places	1	.....	.....	17	.....	75.2	404.3	.....	.....	.....	1	.....	70.0	70.0	1	.....	.....	18	.....	74.9	386.7
All other	41	2	6	354	850.0	50.9	697.5	5	.....	1	50	75.0	30.2	564.0	46	2	7	404	739.3	48.3	681.2
Roof falls due to cars or machines knocking out timbers or props:																					
By shuttle cars or mobile electric trucks	1	.....	.....	16	.....	64.9	414.1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	16	.....	64.9	414.1
By mine motors or cars	2	.....	.....	28	.....	72.7	467.8	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	28	.....	72.7	467.8
By machines	5	.....	.....	47	.....	79.1	648.5	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	47	.....	79.1	648.5
Falls of face or rib:																					
While mining	2	.....	7	329	717.9	49.7	98.8	3	.....	1	129	300.0	26.4	163.2	5	.....	8	458	665.6	43.2	117.0
While loading	.....	.....	.....	326	.....	45.8	45.8	2	.....	.....	44	.....	29.4	289.0	2	.....	.....	370	.....	43.9	75.9
While testing or taking down roof	.....	.....	.....	16	.....	70.7	70.7	.....	.....	.....	3	.....	62.0	62.0	.....	.....	.....	19	.....	69.3	69.3
While setting or pulling timbers or props	1	.....	.....	46	.....	55.3	181.8	1	.....	.....	43	.....	43.4	178.8	2	.....	.....	89	.....	49.5	180.3
While preparing or installing roof bolts	.....	.....	.....	11	.....	72.4	72.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11	.....	72.4	72.4
While moving machinery from one working place to another	.....	.....	.....	8	.....	27.9	27.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	.....	27.9	27.9
While moving or placing cars in active working places	.....	.....	.....	3	.....	16.7	16.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	16.7	16.7
From pressure bumps or bursts	4	.....	.....	60	.....	51.8	423.6	.....	1	1	43	1,800.0	20.0	192.5	4	1	1	103	1,800.0	38.5	328.2
All other	2	.....	.....	81	.....	41.4	184.9	.....	.....	.....	26	.....	40.7	40.7	2	.....	.....	107	.....	41.2	150.5
Rushes, rolls, or slides of coal or rock	.....	.....	.....	39	.....	34.0	34.0	1	.....	1	99	300.0	36.2	97.9	1	.....	1	138	300.0	35.6	80.1
Other falling materials or objects:																					
Props or timbers	.....	.....	1	105	3,000.0	33.0	60.9	.....	.....	.....	22	.....	29.2	29.2	.....	.....	1	127	3,000.0	32.3	55.5
Objects dropped or thrown by coworkers	.....	.....	.....	38	.....	40.9	40.9	.....	.....	.....	18	.....	12.3	12.3	.....	.....	.....	56	.....	31.7	31.7
Rolling, shifting, or sliding materials	1	.....	4	182	168.8	34.6	69.3	.....	.....	1	30	150.0	28.4	32.3	1	.....	5	212	165.0	33.7	64.1
All other	.....	.....	.....	31	.....	14.0	14.0	.....	.....	.....	4	.....	6.0	6.0	.....	.....	.....	35	.....	13.1	13.1
Slips or falls of persons:																					
On same level:																					
While escaping from another hazard	.....	.....	.....	37	.....	55.1	55.1	.....	.....	.....	11	.....	14.7	14.7	.....	.....	.....	48	.....	45.9	45.9
While handling materials	.....	.....	.....	203	.....	29.6	29.6	.....	.....	.....	236	.....	23.1	23.1	.....	.....	.....	439	.....	26.2	26.2
From handtools slipping or breaking	.....	.....	.....	23	.....	17.6	17.6	.....	.....	.....	7	.....	6.7	6.7	.....	.....	.....	30	.....	15.0	15.0
While operating or moving machinery	.....	.....	.....	74	.....	41.3	41.3	.....	.....	.....	23	.....	19.4	19.4	.....	.....	.....	97	.....	36.1	36.1
All other	.....	.....	.....	151	.....	27.1	27.1	.....	.....	.....	97	.....	23.7	23.7	.....	.....	.....	248	.....	25.8	25.8
From an elevation:																					
While escaping from another hazard	.....	.....	.....	1	.....	2.0	2.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	2.0	2.0
While handling materials	.....	.....	.....	23	.....	43.1	43.1	.....	.....	.....	29	.....	47.4	47.4	.....	.....	.....	52	.....	45.5	45.5

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From handtools slipping or breaking				1		31.0	31.0										1		31.0	31.0
While operating or moving machinery	1			7		13.6	761.9								1		7		13.6	761.9
Due to failure of scaffolds, ladders, etc.				3		8.0	8.0				14		15.6	15.6			17		14.2	14.2
All other				35		33.0	33.0	1			32		26.4	207.5	1		67		29.9	117.6
Handling materials:																				
Props, ties, or timbers	1		12	957	278.9	30.3	39.6			1	252	300.0	26.1	27.2	1		13	1,209	280.5	29.4	37.0
Coal			4	599	393.8	29.9	32.3			2	340	225.0	23.8	24.9			6	939	337.5	27.7	29.6
Rock or slate			7	522	182.1	33.9	35.9	1		1	128	150.0	18.4	65.4	1		8	650	178.1	30.8	41.7
Rails			11	416	231.8	33.2	38.3			1	15	150.0	22.9	30.8			12	431	225.0	32.8	38.0
Wire or wire rope			1	56	150.0	31.9	34.0				4		9.5	9.5			1	60	150.0	30.4	32.4
Roof-bolting materials			1	13	75.0	15.4	19.6										1	13	75.0	15.4	19.6
Handling, moving, or installing conveyor pans			4	193	168.8	28.1	31.0				33		24.0	24.0			4	226	168.8	27.5	30.0
Flying particles while loading car of coal, rock, or gob			1	18	1,800.0	22.2	115.7				37		20.6	20.6			1	55	1,800.0	21.1	52.9
Flying particles while handling all other materials				95		9.2	9.2				82		7.1	7.1				177		8.2	8.2
All other			13	459	403.8	23.3	33.8			2	83	112.5	19.6	21.7			15	542	365.0	22.8	32.0
Handtools:																				
Picks			1	74	1,800.0	12.6	36.5				11		8.3	8.3			1	85	1,800.0	12.1	32.9
Axes or hatchets			3	75	175.0	18.3	24.3				28		15.3	15.3			3	103	175.0	17.5	21.9
Hammers or sledges				47		20.4	20.4				11		17.5	17.5				58		19.9	19.9
Crowbars or bars			1	65	300.0	21.5	25.7				23		18.0	18.0			1	88	300.0	20.6	23.7
Shovels				14		24.9	24.9				3		6.3	6.3				17		21.6	21.6
Saws				16		8.6	8.6				7		9.0	9.0				23		8.7	8.7
Hand wrenches or other tools used to install roof bolts				2		16.0	16.0											2		16.0	16.0
All tools in hands of fellow workers			2	46	112.5	16.4	20.4			1	11	150.0	21.4	32.1			3	57	125.0	17.3	22.7
Flying particles from handtools or objects worked on			3	401	1,800.0	14.4	27.7			1	161	1,800.0	6.3	17.3			4	562	1,800.0	12.1	24.7
All other			2	166	187.5	22.0	23.9				19		17.0	17.0			2	185	187.5	21.4	23.2
Stepping or kneeling on sharp or loose objects:																				
Stepping on nails or other sharp objects				18		16.6	16.6				52		12.3	12.3				70		13.4	13.4
Stepping on loose objects				128		23.8	23.8				18		49.9	49.9				146		27.0	27.0
Knee or hand injuries while working on all fours				80		27.7	27.7				9		21.9	21.9				89		27.1	27.1
Striking or bumping against objects	1			77		24.2	100.8				15		27.9	27.9	1			92		24.8	89.1
Haulage:																				
Struck, run over, or squeezed between cars or motors:																				
Coupling or uncoupling	2	1	74	509	297.3	38.7	101.8			3	58	466.7	45.9	66.6	2	1	77	567	303.9	39.4	98.5
Switching, spragging, blocking, or braking	1		16	141	1,073.4	39.3	181.7			3	11	325.0	57.3	114.6	1		19	152	955.3	40.6	176.3
Pulling, pushing, or dropping			1	41	150.0	30.3	33.2				12		28.1	28.1			1	53	150.0	29.8	32.0
Operating or riding	8		6	83	1,400.0	48.7	623.1				3		16.7	16.7	8		6	86	1,400.0	47.6	604.9
All other	1		10	136	2,017.5	43.2	218.0			1	23	563.0	67.3	87.9	1		11	159	1,885.3	46.7	199.7
Squeezed between car or motor and rib, timber, or roof:																				
Coupling or uncoupling	4		3	73	1,200.0	52.1	392.5				3		36.7	36.7	4		3	76	1,200.0	51.5	379.7
Switching, spragging, blocking, or braking	2			76		39.9	192.7				5		35.2	35.2	2			81		39.6	183.2
Pulling, pushing, or dropping			2	46	225.0	23.8	32.1				12		61.8	61.8			2	58	225.0	31.6	38.1
Operating or riding	13	1	6	283	587.5	46.0	331.9				21		45.5	45.5	13	1	6	304	587.5	46.0	313.3
All other	3		2	60	225.0	59.2	338.5				7		21.4	21.4	3		2	67	225.5	55.3	307.7
Derailments	4	1	11	277	2,065.9	53.4	230.5				28		66.5	66.5	4	1	11	305	2,065.9	54.6	216.2
Rerailing cars or motors	1		21	295	450.7	35.8	82.1				32		42.0	42.0	1		21	327	450.7	36.4	78.4
Collisions (cars or motors under control)	8		3	92	4,025.0	48.7	626.7				3		9.7	9.7	8		3	95	4,025.0	47.5	609.3
Runaways (cars or motors not under control)	13		2	49	450.0	96.1	1,306.4	2			5		22.4	22.4	15		2	54	450.0	89.3	1,348.2
Falling, slipping, or jumping in or from cars or motors	1		4	283	562.5	42.6	70.5				25		25.5	25.5	1		4	308	562.5	41.2	66.9
Shuttle cars or mobile electric trucks:																				
Struck or run over			3	78	1,625.0	48.0	106.4										3	78	1,625.0	48.0	106.4
Squeezed between shuttle cars or mobile electric trucks and roof, rib, machine, etc.	13	1	8	249	900.0	43.6	376.6								13	1	8	249	900.0	43.6	376.6
All other			3	96	300.0	37.1	45.1										3	96	300.0	37.1	45.1

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TABLE 22.—*Number and average severity of injuries at coal mines in the United States, by kind of coal, principal injury agencies, general location, and degree of injury, 1953*—Continued

Injury agency and general location	Bituminous-coal mines							Anthracite mines							All coal mines							
	Number of injuries				Average severity			Number of injuries				Average severity			Number of injuries				Average severity			
	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	
		Total	Partial						Total	Partial						Total	Partial					
UNDERGROUND MINES—continued																						
Underground—Continued																						
Haulage—Continued																						
Miscellaneous haulage:																						
Coupling or uncoupling (cars not moving)			1	26	600.0	27.8	49.0				25		22.0	22.0			1	51	600.0	24.9	36.0	
Ropes or cables on haulage			4	79	318.8	33.6	47.3				7		16.9	16.9			4	86	318.8	32.2	45.0	
Animals				10		8.0	8.0				3		27.7	27.7				13		12.5	12.5	
Slips or strains from pulling, pushing, or dropping car by hand				150		30.0	30.0				63		18.2	18.2				213		26.5	26.5	
Riding or getting on or off conveyor belts				60		33.9	33.9											60		33.9	33.9	
Flying particles on haulage				61		7.2	7.2				8		24.3	24.3				69		9.2	9.2	
All other			7	373	492.9	27.9	36.4			1	44	2,400.0	23.8	76.6			8	417	731.3	27.4	40.7	
Explosions of gas or coal dust:																						
Matches, igniters, or smoking											2		64.0	64.0				2		64.0	64.0	
Electric arc	4			4		21.0	3,010.5								4			4		21.0	3,010.5	
Black blasting powder	5						6,000.0								5						6,000.0	
High explosives								4			11		47.8	1,635.1	4			11		47.8	1,635.1	
All other				6		33.7	33.7	1			2		271.5	2,181.0	1			8		93.1	749.4	
Explosives and breaking agents:																						
Industrial explosives:																						
Premature shot or blast		2		8		25.8	1,220.6				2		340.0	340.0		2		10		88.6	1,073.8	
Delayed blast (including digging into)	1		2	3	1,800.0	32.3	1,616.2	1						6,000.0	2		2	3	1,800.0	32.3	2,242.4	
Shot breaking through rib or pillar				28		43.4	43.4											28		43.4	43.4	
Blown-out or windy shot				2		147.0	147.0											2		147.0	147.0	
Flying fragments	1		1	81	300.0	26.4	101.6				7		50.6	50.6	1		1	88	300.0	28.3	97.7	
Suffocation from explosives smoke				4		18.8	18.8				6		5.8	5.8				10		11.0	11.0	
Caps or detonators			1	1	600.0	7.0	303.5			1		3,000.0		3,000.0			2	1	1,800.0	7.0	1,202.3	
Insufficient warning or improper blasting lines	1			15		22.4	396.0				3		85.3	85.3	1			18		32.9	346.9	
All other				2		4.0	4.0				1		10.0	10.0				3		6.0	6.0	
Cardox	1			8		57.0	717.3								1			8		57.0	717.3	
Airdox			1	43	750.0	39.2	55.4										1	43	750.0	39.2	55.4	
Electricity (caused by current, including sparks or flashes):																						
Trolley wire or pole	4			35		9.0	623.5	2			8		10.8	1,208.6	6			43		9.3	742.9	
Transformers, generators, etc				3		3.7	3.7											3		3.7	3.7	
Other permanent or semipermanent lighting circuits	5			50		10.5	555.0				2		30.5	30.5	5			52		11.3	536.6	
Locomotives or shuttle cars				53		18.5	18.5				2		1.5	1.5				55		17.8	17.8	
Mining or loading machines	1			20		9.9	295.1								1			20		9.9	295.1	
Cutout switches or junction boxes				10		6.6	6.6				3		6.0	6.0				13		6.5	6.5	
Cable for mobile mining, loading, or haulage equipment	1	1	1	319	600.0	15.1	54.1				7		4.7	4.7	1	1	1	326	600.0	14.9	53.1	
All other	1			59		11.2	111.0				1		1.0	1.0	1			60		11.0	109.2	
Machinery:																						
While moving mining machines	2		18	213	390.8	53.1	130.3				2		6.0	6.0	2		18	215	390.8	52.7	129.2	
While setting up mining machines			4	163	450.0	23.7	33.9				1		21.0	21.0			4	164	450.0	23.7	33.8	
While operating mining machines	4		31	504	744.2	33.3	118.5				3		35.0	35.0	4		31	507	744.2	33.3	118.0	
Belt conveyors			3	60	325.0	46.8	60.0										3	60	325.0	46.8	60.0	
Chain, bucket, or shaker conveyors			12	125	256.3	38.2	57.3			2	15	112.5	37.7	46.5			14	140	235.7	38.2	56.1	
Loading machines (including self-loading heads)		1	18	449	475.0	35.4	65.0				14		23.2	23.2		1	18	463	475.0	35.0	63.8	

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While moving loading machines or self-loading heads			4	97	1,050.0	51.2	90.7				2		11.0	11.0			4	99	1,050.0	50.3	89.2
Scraper conveyors				2		81.0	81.0			2	24	525.0	42.7	79.8			2	26	525.0	45.6	79.9
Power drills (except for installing roof bolts)	1		4	418	1,387.5	32.1	59.0			3	60	1,200.0	19.0	75.2	1		7	478	1,307.1	30.4	61.1
Power drills (used for installing roof bolts)			4	86	262.5	33.0	43.2										4	86	262.5	33.0	43.2
Power equipment (except drills) used for installing roof bolts			2	21	1,950.0	26.5	193.8										2	21	1,950.0	26.5	193.8
While moving any machine except mining or loading machines	1		5	154	217.6	36.2	79.1				19		13.3	13.3	1		5	173	217.6	33.7	72.1
Flying particles set in motion by machinery (except roof-bolting equipment)				99		13.8	13.8				32		7.9	7.9				131		12.3	12.3
Flying particles set in motion by roof-bolting equipment				74		7.1	7.1											74		7.1	7.1
While moving, setting up, or operating continuous mining machines	1		3	8	175.0	84.6	600.2								1		3	8	175.0	84.6	600.2
All other			16	66	778.9	32.2	177.9				11		11.4	11.4			16	77	778.9	29.2	158.2
Suffocation (no flames or smoldering):																					
From natural mine gases				4		19.3	19.3	1			1		3.0	3,001.5	1			5		16.0	1,013.3
From foreign gases (gasoline fumes, etc.)				9		6.4	6.4				1		1.0	1.0				10		5.9	5.9
Mine fires and suffocation from fires:																					
Other fires:																					
Belt conveyors				1		4.0	4.0											1		4.0	4.0
Equipment or material				13		18.7	18.7											13		18.7	18.7
Burning or exploding oil, gasoline, etc.				3		17.0	17.0											3		17.0	17.0
Miscellaneous causes:																					
Flying particles from draft or wind				9		7.2	7.2				4		4.8	4.8				13		6.5	6.5
Acetylene or electric welding (burns, flashes, or flying particles)				18		8.1	8.1											18		8.1	8.1
Irritations and burns from battery fluid or corrosive materials				60		31.1	31.1				9		9.9	9.9				69		28.4	28.4
Inrush of water								3						6,000.0	3						6,000.0
All other				97		31.6	31.6				25		8.2	8.2				122		26.8	26.8
Total, underground	345	17	436	16,389	716.9	37.2	180.1	59	2	34	3,264	589.4	25.7	139.9	404	19	470	19,653	707.7	35.3	173.5
Shaft and slope:																					
Rushes, rolls, or slides of coal or rock											1		1.0	1.0				1		1.0	1.0
Other falling materials or objects				2		137.5	137.5				8		12.4	12.4				10		37.4	37.4
Falls of persons:																					
Down shaft or slope				5		28.8	28.8	1						6,000.0	1			5		28.8	1,024.0
All other				16		21.8	21.8				13		23.7	23.7				29		22.7	22.7
Handling materials			1	8	75.0	18.6	24.9				9		29.3	29.3			1	17	75.0	24.3	27.1
Haulage:																					
Struck, run over, or squeezed between cars or motors			1	8	3,600.0	28.1	425.0				4		13.0	13.0			1	12	3,600.0	23.1	298.2
Squeezed between cars or motors and rib, timber, or roof	1			3		24.3	1,518.3				4		23.0	23.0	1			7		23.6	770.6
Derailments	2			7		27.3	1,354.6				6		24.8	24.8	2			13		26.2	822.7
Runaways (cars or motors not under control)	1			1		179.0	3,089.5				3		26.0	26.0	1			4		64.3	1,251.4
All other				11		45.4	45.4				14		63.1	63.1				25		55.3	55.3
Machinery				3		10.7	10.7											3		10.7	10.7
All other				3		2.7	2.7				5		4.4	4.4				8		3.8	3.8
Total, shaft and slope	4		2	67	1,837.5	31.7	408.2	1			67		29.1	116.9	5		2	134	1,837.5	30.4	267.7
Surface:																					
Falling materials or objects:																					
Rolling, shifting or sliding materials	2		1	23	300.0	26.2	496.3				13		25.9	25.9	2		1	36	300.0	26.1	339.5
All other				26		12.6	12.6				9		9.2	9.2				35		11.7	11.7
Slips or falls of persons:																					
On same level:																					
While handling materials				42		30.5	30.5				31		27.9	27.9				73		29.4	29.4
All other				103		36.4	36.4				20		27.6	27.6				123		34.9	34.9
From an elevation:																					
While handling materials				27		45.1	45.1	1			10		28.7	571.5	1			37		40.6	167.5
Due to failure of scaffolds, ladders, etc.				18		64.9	64.9				9		16.1	16.1				27		48.6	48.6
All other	2			64		38.8	219.5				11		33.4	33.4	2			75		38.0	192.9

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TABLE 22.—*Number and average severity of injuries at coal mines in the United States, by kind of coal, principal injury agencies, general location, and degree of injury, 1953*—Continued

Injury agency and general location	Bituminous-coal mines							Anthracite mines							All coal mines						
	Number of injuries				Average severity			Number of injuries				Average severity			Number of injuries				Average severity		
	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries
		Total	Partial						Total	Partial						Total	Partial				
UNDERGROUND MINES—continued																					
Surface—Continued																					
Handling materials:																					
Props, ties, or lumber			1	81	300.0	25.7	29.1				29		34.1	34.1			1	110	300.0	27.9	30.4
Coal			1	26	375.0	17.4	30.6	1			12		27.6	487.0	1		1	38	375.0	20.6	179.0
Rock or slate				72		20.3	20.3				11		36.1	36.1				83		22.3	22.3
Rails				30		22.5	22.5				3		44.0	44.0				33		24.5	24.5
Flying particles while handling all other materials				16		10.1	10.1				15		10.4	10.4				31		10.2	10.2
All other	1		10	271	135.0	25.1	50.2			2	78	225.0	18.5	23.6	1		12	349	150.0	23.6	44.3
Handtools:																					
All handtools			3	83	225.0	22.5	29.6				13		21.5	21.5			3	96	225.0	22.4	28.5
Flying particles from handtools or objects worked on			1	64	1,800.0	14.3	41.8			1	10	1,800.0	21.4	183.1			2	74	1,800.0	15.3	62.2
Stepping or kneeling on sharp or loose objects				34		22.8	22.8				11		26.6	26.6				45		23.8	23.8
Striking or bumping against objects				9		7.0	7.0				3		19.7	19.7				12		10.2	10.2
Haulage:																					
Mine-gage haulage:																					
Struck, run over, or squeezed between rail equipment:																					
Coupling or uncoupling			15	59	197.5	32.9	66.3	1			6		53.3	902.9	1		15	65	197.5	34.8	138.6
Switching, spragging, blocking, or braking			2	9	75.0	67.2	68.6				2		120.0	120.0			2	11	75.0	76.8	76.5
Pulling, pushing, or dropping			1	5	300.0	30.2	75.2				2		38.0	38.0			1	7	300.0	32.4	65.9
Operating or riding	1			4		106.3	1,285.0								1			4		106.3	1,285.0
All other			3	16	1,225.0	99.8	277.4										3	16	1,225.0	99.8	277.4
Squeezed between rail equipment and construction:																					
Coupling or uncoupling	1			1		239.0	3,119.5				1		40.0	40.0	1			2		139.5	2,093.0
Switching, spragging, blocking, or braking				2		47.5	47.5											2		47.5	47.5
Pulling, pushing, or dropping			1	3	300.0	40.0	105.0				2		48.5	48.5			1	5	300.0	43.4	86.2
Operating or riding				4		53.3	53.3											4		53.3	53.3
All other				2		128.5	128.5				1		46.0	46.0				3		101.0	101.1
Derailments			1	20	2,250.0	48.7	153.5				1		59.0	59.0			1	21	2,250.0	49.2	149.2
Rerailing cars or motors			3	18	200.0	35.8	59.2				3		6.0	6.0			3	21	200.0	31.5	52.6
Collisions (cars or motors under control)	1			8		50.1	711.2				1		56.0	56.0	1			9		50.8	645.7
Runaways (cars or motors not under control)			1	7	4,500.0	103.7	653.3				1		5.0	5.0			1	8	4,500.0	91.4	581.2
Falling, slipping, or jumping in or from rail equipment				32		39.7	39.7				4		34.0	34.0				36		39.1	39.1
Coupling or uncoupling (cars not moving)				9		16.2	16.2				3		15.3	15.3				12		16.0	16.0
Ropes or cables on haulage			1	12	75.0	19.6	23.8			2	5	225.0	23.8	81.3			3	17	175.0	20.8	44.0
Slips or strains from pulling, pushing, or dropping cars by hand				20		26.7	26.7				5		50.2	50.2				25		31.4	31.4
All other			1	90	300.0	27.8	30.7				12		29.0	29.0			1	102	300.0	27.9	30.5
Standard-gage haulage (railway)	9	1	6	142	1,750.0	37.7	480.1			1	36	300.0	31.7	39.0	9	1	7	178	1,542.9	36.5	396.4
Trucks, tractors, automobiles, etc.	1			45		22.2	152.2			2	16	525.0	36.3	90.6	1		2	61	525.0	25.9	134.9
Explosions of gas or coal dust				3		45.7	45.7											3		45.7	45.7
Explosives and breaking agents				1		192.0	192.0											1		192.0	192.0
Electricity (caused by current, including sparks or flashes):																					
Trolley wire or pole				3		8.7	8.7				1		47.0	47.0				4		18.3	18.3

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Transformers, generators, etc.	1			3		6.7	1,505.0								1			3		6.7	1,505.0
Other permanent or semipermanent lighting circuits	2			8		13.3	1,210.6				1		9.0	9.0	2			9		12.8	1,101.4
Electric locomotives				8		29.5	29.5											8		29.5	29.5
Cables on machinery or haulage motors	1			7		13.3	761.6								1			7		13.3	761.6
All other				20		23.8	23.8				2		12.0	12.0				22		22.7	22.7
Machinery:																					
Belt conveyors	1		2	17	112.5	51.2	354.8				2		2.5	2.5	1		2	19	112.5	46.1	322.7
Chain, shaker, or bucket conveyors	1		4	8	543.8	22.1	642.5			1	7	75.0	50.7	53.8	1		5	15	450.0	35.5	418.2
Stationary surface machinery	1		15	40	768.3	28.2	333.1	1			8		10.3	675.8	2		15	48	768.3	25.2	380.5
All other	1		2	77	112.5	18.6	95.7				13		19.4	19.4	1		2	90	112.5	18.7	85.0
Mine fires and suffocation from fires:																					
Burning or exploding oil, gasoline, etc.				5		77.2	77.2											5		77.2	77.2
Miscellaneous causes:																					
Flying particles from draft or wind				7		10.1	10.1				1		3.0	3.0				8		9.3	9.3
Acetylene or electric welding (burns, flashes, or flying particles)				32		6.6	6.6				14		5.9	5.9				46		6.4	6.4
Irritations and burns from battery fluid or other corrosive materials				16		15.2	15.2				1		13.0	13.0				17		15.1	15.1
Burns from controlled fires				15		20.7	20.7				8		21.0	21.0				23		20.8	20.8
All other	1			33		36.2	211.6				12		10.4	10.4	1			45		29.3	159.1
Total, surface	27	1	75	1,800	594.2	29.3	139.5	4		9	459	458.3	25.4	84.3	31	1	84	2,259	579.6	28.5	128.5
Total, underground mines	376	18	513	18,256	703.3	36.4	176.9	64	2	43	3,790	561.9	25.7	132.8	440	20	556	22,046	692.4	34.6	169.4
STRIP MINES																					
Falls or slides of coal or overburden:																					
While mining	2			20		21.0	564.5				2		109.5	109.5	2			22		29.0	526.6
While loading	2		1	5	300.0	21.6	1,551.0								2		1	5	300.0	21.6	1,551.0
All other	1			16		27.7	379.0				5		9.0	9.0	1			21		23.2	294.9
Other falling materials or objects				45		22.9	22.9				8		10.5	10.5				53		21.1	21.1
Slips or falls of persons:																					
On same level:																					
While handling materials				19		20.0	20.0				13		22.0	22.0				32		20.8	20.8
While operating or moving machinery				26		23.9	23.9				7		26.7	26.7				33		24.5	24.5
All other				83		9.2	9.2				8		24.0	24.0				91		10.5	10.5
From an elevation:																					
While handling materials				15		61.3	61.3				7		54.1	54.1				22		59.0	59.0
While operating or moving machinery				30		20.1	20.1				14		17.3	17.3				44		19.2	19.2
Due to failure of scaffolds, ladders, etc.				8		40.3	40.3				2		3.5	3.5				10		32.9	32.9
All other				44		15.8	15.8				1		1.0	1.0				45		15.4	15.4
Handling materials:																					
Props, ties, or lumber				38		40.7	40.7				4		16.8	16.8				42		38.5	38.5
Coal, rock, or slate				24		43.7	43.7				9		17.0	17.0				33		36.4	36.4
All other	1		3	223	300.0	22.4	52.4				44		18.1	18.1	1		3	267	300.0	21.7	46.8
Handtools:																					
All handtools				38		16.3	16.3				8		13.9	13.9				46		15.9	15.9
Flying particles from handtools or objects worked on				54		18.4	18.4				6		4.0	4.0				60		17.0	17.0
Stepping or kneeling on sharp or loose objects				30		27.8	27.8				4		9.5	9.5				34		25.6	25.6
Striking or bumping against objects				4		9.3	9.3				1		19.0	19.0				5		11.2	11.2
Haulage:																					
Mine-gage haulage				15		23.4	23.4				4		18.0	18.0				19		22.3	22.3
Standard-gage haulage (railway)	1		2	60	1,575.0	28.2	172.1				3		25.0	25.0	1		2	63	1,575.0	28.0	165.4
Trucks, tractors, automobiles, etc.				94		29.7	29.7			1	49	225.0	28.5	32.4			1	143	225.0	29.3	30.7
Explosives:																					
Flying fragments	1			11		13.9	512.8				4		24.0	24.0	1			15		16.6	390.6
All other				5		37.2	37.2											5		37.2	37.2
Electricity (caused by current, including sparks or flashes):																					
Other permanent or semipermanent lighting circuits	2						6,000.0								2						6,000.0
All other	1			9		21.9	619.7				1		11.0	11.0	1			10		20.8	564.4
Machinery:																					
Belt conveyors	1		1	6	75.0	17.7	772.6								1		1	6	75.0	17.7	772.6
Chain, shaker, or bucket conveyors	1			4		20.0	1,216.0								1			4		20.0	1,216.0
Power drills			3	62	300.0	20.9	33.8			1	17	300.0	25.1	40.4			4	79	300.0	21.8	35.2

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TABLE 22.—*Number and average severity of injuries at coal mines in the United States, by kind of coal, principal injury agencies, general location, and degree of injury, 1953*—Continued

Injury agency and general location	Bituminous-coal mines							Anthracite mines							All coal mines						
	Number of injuries				Average severity			Number of injuries				Average severity			Number of injuries				Average severity		
	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries
		Total	Partial						Total	Partial						Total	Partial				
STRIP MINES—continued																					
Machinery—Continued																					
Power shovels, draglines, bulldozers, etc.	5		16	124	1,108.6	30.1	355.0			3	23	300.0	21.9	54.0	5		19	147	980.9	28.8	309.2
Stationary surface machinery			3	24	487.7	23.5	75.1			1		150.0		150.0			4	24	403.3	23.5	77.8
While moving shovels, drills, conveyors, etc.	1		1	13	300.0	17.8	435.4			1	7	1,200.0	11.6	160.1	1		2	20	750.0	15.6	339.7
All other	1		5	37	480.0	15.8	208.9				10		11.3	11.3	1		5	47	480.0	14.8	171.6
Mine fires and suffocation from fires:																					
Burning petroleum products or flammable liquids	1			14		19.9	418.6				1		5.0	5.0	1			15		18.9	392.8
All other				3		42.3	42.3											3		42.3	42.3
Miscellaneous causes:																					
Flying particles from draft or wind				3		3.7	3.7				2		4.5	4.5				5		4.0	4.0
Acetylene or electric welding (burns, flashes, or flying particles)				39		14.1	14.1				1		5.0	5.0				40		13.8	13.8
All other				45		15.4	15.4				7		55.4	55.4				52		20.8	20.8
Total, strip mines	21		35	1,290	777.9	23.3	136.1			7	272	396.4	22.2	31.6	21		42	1,562	714.3	23.1	118.2
WASHERIES																					
Falls of persons											6		17.2	17.2				6		17.2	17.2
Handling materials											7		11.3	11.3				7		11.3	11.3
All other											11		23.4	23.4				11		23.4	23.4
Total, washeries											24		18.3	18.3				24		18.3	18.3
DREDGES																					
All causes											8		11.4	11.4				8		11.4	11.4
Grand total	397	18	548	19,546	708.1	35.6	174.2	64	2	50	4,094	538.8	25.4	125.2	461	20	598	23,640	693.9	33.8	165.9

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TABLE 23.—*Number and average severity of injuries at coal mines in the United States, by kind of coal, principal injury agencies, general location, and degree of injury, 1954*

Injury agency and general location	Bituminous-coal mines							Anthracite mines							All coal mines						
	Number of injuries				Average severity			Number of injuries				Average severity			Number of injuries				Average severity		
	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries
		Total	Partial						Total	Partial						Total	Partial				
UNDERGROUND MINES																					
Underground:																					
Falls of roof:																					
While mining	52	1	7	524	1,242.9	58.2	611.6	4	.....	1	60	150.0	28.0	397.4	56	1	8	584	1,106.3	55.1	590.2
While loading	47	3	5	634	1,290.0	58.7	498.8	12	.....	3	38	1,300.0	31.8	1,454.9	59	3	8	672	1,293.8	57.2	567.1
While testing or taking down roof	10	.....	2	150	225.0	51.1	420.5	.....	.....	.....	12	.....	51.8	51.8	10	.....	2	162	225.0	51.2	395.1
While setting or pulling timbers or props	18	1	6	259	991.7	65.9	482.5	10	.....	1	54	750.0	21.7	952.7	28	1	7	313	957.1	58.3	570.0
While preparing or installing roof bolts	5	.....	2	102	225.0	50.3	326.4	.....	.....	.....	2	.....	7.0	7.0	5	.....	2	104	225.0	49.5	320.7
While moving machinery from one working place to another	.....	.....	.....	20	.....	57.1	57.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	.....	57.1	57.1
While moving or placing cars in active working places	.....	.....	2	11	195.0	46.3	69.2	.....	.....	.....	1	.....	16.0	16.0	.....	.....	2	12	195.0	43.8	65.4
While moving, setting up, or operating continuous mining machines	.....	.....	.....	7	.....	104.6	104.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	.....	104.6	104.6
All other	26	1	6	288	1,975.0	45.2	582.1	4	.....	.....	24	.....	58.5	907.3	30	1	6	312	1,975.0	46.2	608.2
Roof falls due to cars or machines knocking out timbers or props:																					
By shuttle cars or mobile electric trucks	2	.....	.....	12	.....	72.8	919.6	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	12	.....	72.8	919.6
By mine motors or cars	1	.....	.....	16	.....	54.3	404.1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	16	.....	54.3	404.1
By machines	2	.....	2	28	1,425.0	68.3	523.8	.....	.....	.....	.....	.....	.....	.....	2	.....	2	28	1,425.0	68.3	523.8
Falls of face or rib:																					
While mining	5	1	4	244	600.0	44.7	194.2	1	.....	.....	102	.....	29.6	87.5	6	1	4	346	600.0	40.3	163.4
While loading	2	1	2	205	1,875.0	55.8	158.1	3	.....	.....	36	.....	37.9	496.5	5	1	2	241	1,875.0	53.1	211.1
While testing or taking down roof	.....	.....	.....	3	.....	43.3	43.3	.....	.....	.....	1	.....	121.0	121.0	.....	.....	.....	4	.....	62.8	62.8
While setting or pulling timbers or props	.....	.....	.....	35	.....	33.3	33.3	2	.....	1	30	3,000.0	35.6	486.9	2	.....	1	65	3,000.0	34.4	253.4
While preparing or installing roof bolts	.....	.....	.....	5	.....	55.4	55.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	55.4	55.4
While moving machinery from one working place to another	.....	.....	.....	4	.....	11.3	11.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	11.3	11.3
While moving or placing cars in active working places	.....	.....	.....	2	.....	37.5	37.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	37.5	37.5
From pressure bumps or bursts	4	.....	2	55	525.0	47.2	453.2	.....	.....	.....	56	.....	31.4	31.4	4	.....	2	111	525.0	39.2	251.3
All other	3	.....	2	55	300.0	79.7	383.1	.....	.....	.....	10	.....	33.0	33.0	3	.....	2	65	300.0	72.5	333.1
Rushes, rolls, or slides of coal or rock	.....	.....	1	13	2,400.0	47.4	215.4	3	.....	3	103	400.0	32.3	206.7	3	.....	4	116	900.0	34.0	207.7
Other falling materials or objects:																					
Props or timbers	.....	.....	.....	65	.....	38.5	38.5	.....	.....	1	15	75.0	23.3	26.5	.....	.....	1	80	75.0	35.7	36.1
Objects dropped or thrown by coworkers	.....	.....	.....	22	.....	35.5	35.5	.....	.....	.....	3	.....	16.0	16.0	.....	.....	.....	25	.....	33.1	33.1
Rolling, shifting, or sliding materials	.....	.....	2	143	300.0	30.2	33.9	.....	.....	.....	35	.....	19.9	19.9	.....	.....	2	178	300.0	28.1	31.2
All other	.....	.....	.....	13	.....	26.6	26.6	.....	.....	.....	9	.....	33.8	33.8	.....	.....	.....	22	.....	29.5	29.5
Slips or falls of persons:																					
On same level:																					
While escaping from another hazard	.....	.....	.....	8	.....	32.9	32.9	.....	.....	.....	13	.....	23.0	23.0	.....	.....	.....	21	.....	26.8	26.8
While handling materials	.....	.....	.....	132	.....	29.9	29.9	.....	.....	1	150	150.0	30.3	31.1	.....	.....	1	282	150.0	30.1	30.5
From handtools slipping or breaking	.....	.....	.....	19	.....	25.9	25.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19	.....	25.9	25.9
While operating or moving machinery	.....	.....	.....	43	.....	28.2	28.2	.....	.....	.....	16	.....	34.1	34.1	.....	.....	.....	59	.....	29.8	29.8
All other	.....	.....	.....	106	.....	32.3	32.3	.....	.....	.....	70	.....	24.4	24.4	.....	.....	.....	176	.....	29.2	29.2
From an elevation:																					
While escaping from another hazard	.....	.....	.....	2	.....	38.5	38.5	1	.....	.....	1	.....	23.0	3,011.5	1	.....	.....	3	.....	33.3	1,525.0
While handling materials	.....	.....	.....	15	.....	54.6	54.6	.....	.....	.....	22	.....	44.4	44.4	.....	.....	.....	37	.....	48.5	48.5
From handtools slipping or breaking	.....	.....	.....	1	.....	56.0	56.0	.....	.....	.....	2	.....	11.0	11.0	.....	.....	.....	3	.....	26.0	26.0

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TABLE 23.—*Number and average severity of injuries at coal mines in the United States, by kind of coal, principal injury agencies, general location, and degree of injury, 1954*—Continued

Injury agency and general location	Bituminous-coal mines							Anthracite mines							All coal mines						
	Number of injuries				Average severity			Number of injuries				Average severity			Number of injuries				Average severity		
	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries
		Total	Partial						Total	Partial						Total	Partial				
UNDERGROUND MINES—continued																					
Underground—Continued																					
Slips or falls of persons—Continued																					
From an elevation—Continued																					
While operating or moving machinery				4		13.5	13.5				4		17.8	17.8				8		15.6	15.6
Due to failure of scaffolds, ladders, etc				7		17.7	17.7	1			16		35.2	386.1	1			23		29.9	278.6
All other				22		31.0	31.0				16		21.2	21.2				38		26.9	26.9
Handling materials:																					
Props, ties, or timbers			9	640	152.1	27.8	29.5			2	195	375.0	23.4	26.9			11	835	192.6	26.7	28.9
Coal			2	389	300.0	28.7	30.1			8	248	618.8	27.1	45.6			10	637	555.0	28.1	36.2
Rock or slate			5	282	429.0	30.2	37.1			2	86	300.0	20.8	27.1			7	368	392.1	28.0	34.8
Rails			6	280	150.0	31.3	33.8				20		15.4	15.4			6	300	150.0	30.3	32.6
Wire or wire rope			1	44	300.0	18.0	24.3				6		25.3	25.3			1	50	300.0	18.9	24.4
Roof-bolting materials			1	15	150.0	68.1	73.2				1		13.0	13.0			1	16	150.0	64.6	69.6
Handling, moving, or installing conveyor pans			2	135	49.5	25.0	25.4				22		39.0	39.0			2	157	49.5	27.0	27.3
Flying particles while loading car of coal, rock, or gob				7		9.0	9.0				24		5.7	5.7				31		6.5	6.5
Flying particles while handling all other materials			1	90	180.0	10.2	12.1			1	52	1,800.0	6.0	39.9			2	142	990.0	8.7	22.3
All other			10	326	154.7	27.0	30.8			1	66	150.0	16.7	18.7			11	392	154.3	25.2	28.8
Handtools:																					
Picks				51		13.4	13.4				11		16.4	16.4				62		13.9	13.9
Axes or hatchets			1	35	600.0	20.9	36.9				19		13.2	13.2			1	54	600.0	18.2	28.7
Hammers or sledges				33		16.5	16.5				4		7.0	7.0				37		15.5	15.5
Crowbars or bars				47		18.0	18.0				20		30.1	30.1				67		21.6	21.6
Shovels			1	13	300.0	41.2	59.6										1	13	300.0	41.2	59.6
Saws				11		22.6	22.6				3		11.7	11.7				14		20.3	20.3
Hand wrenches or other tools used to install roof bolts				3		31.0	31.0											3		31.0	31.0
All tools in hands of fellow workers			1	21	300.0	19.1	31.9				10		17.0	17.0			1	31	300.0	18.5	27.3
Flying particles from handtools or objects worked on			3	277	1,398.0	12.4	27.2			1	113	1,800.0	6.8	22.5			4	390	1,498.5	10.8	25.9
All other			1	119	75.0	19.8	20.3				10		9.9	9.9			1	129	75.0	19.0	19.5
Stepping or kneeling on sharp or loose objects:																					
Stepping on nails or other sharp objects				16		5.0	5.0				40		5.3	5.3				56		5.2	5.2
Stepping on loose objects			1	89	600.0	25.7	32.1				20		22.0	22.0			1	109	600.0	25.0	30.2
Knee or hand injuries while working on all fours				77		22.8	22.8				11		15.9	15.9				88		21.9	21.9
Striking or bumping against objects				56		24.0	24.0				4		8.8	8.8				60		23.0	23.0
Haulage:																					
Struck, run over, or squeezed between cars or motors:																					
Coupling or uncoupling	1	1	45	384	276.7	39.8	92.2			4	27	937.5	68.9	181.0	1	1	49	411	330.6	41.8	98.2
Switching, spragging, blocking, or braking			16	86	243.8	47.2	78.1			2	21	650.0	35.5	89.0			18	107	288.9	44.9	80.1
Pulling, pushing, or dropping			1	32	150.0	53.0	55.9				10		80.9	80.9			1	42	150.0	59.6	61.7
Operating or riding	5		10	61	1,492.5	56.2	636.2	1			5		127.8	1,106.5	6		10	66	1,492.5	61.6	670.6
All other	4	1	7	95	1,521.4	59.5	432.7	2		1	20	4,500.0	70.2	778.4	6	1	8	115	1,893.8	61.4	493.9
Squeezed between car or motor and rib, timber, or roof:																					
Coupling or uncoupling			2	47	300.0	38.8	49.4			1	2	150.0	13.0	58.7			3	49	250.0	37.7	50.0

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Switching, spragging, blocking, or braking	1		1	47	600.0	45.9	178.7			1	6	300.0	18.8	59.0	1		2	53	450.0	42.8	163.7
Pulling, pushing, or dropping	1		1	45	150.0	20.9	150.8				7		26.3	26.3	1		1	52	150.0	21.6	134.7
Operating or riding	8		2	199	375.0	35.3	266.9				9		27.6	27.6	8		2	208	375.0	35.0	257.0
All other	2		1	60	750.0	47.3	247.4				2		8.5	8.5	2		1	62	750.0	46.0	240.1
Derailments	9	1	3	169	1,000.0	53.6	395.9	1			19		48.0	345.6	10	1	3	188	1,000.0	53.0	390.9
Rerailing cars or motors	1		18	202	615.8	32.8	107.3			2	27	2,325.0	35.0	192.9	1		20	229	786.8	33.1	117.2
Collisions (cars or motors under control)	5		2	94	2,400.0	63.8	404.0				2		59.0	59.0	5		2	96	2,400.0	63.7	397.3
Runaways (cars or motors not under control)	7			42		41.0	892.3	1			6		36.8	888.7	8			48		40.5	891.8
Falling, slipping, or jumping in or from cars or motors	2		1	178	4,500.0	46.0	136.4				28		29.5	29.5	2		1	206	4,500.0	43.7	122.0
Shuttle cars or mobile electric trucks:																					
Struck or run over	1			74		35.0	114.6				1		5.0	5.0	1			75		34.6	113.1
Squeezed between shuttle cars or mobile electric trucks and roof, rib, machines, etc	15		5	225	1,617.0	47.1	443.6								15		5	225	1,617.0	47.1	443.6
All other			11	88	296.6	23.6	54.0										11	88	296.6	23.6	54.0
Miscellaneous haulage:																					
Coupling or uncoupling (cars not moving)			1	22	300.0	27.0	38.9				8		28.6	28.6			1	30	300.0	27.5	36.3
Ropes or cables on haulage			3	50	500.0	61.2	86.0	1			6		20.2	874.4	1		3	56	500.0	56.8	178.0
Animals				8		18.6	18.6											8		18.6	18.6
Slips or strains from pulling, pushing, or dropping car by hand				105		28.9	28.9				22		21.2	21.2				127		27.6	27.6
Riding or getting on or off conveyor belts				66		24.5	24.5											66		24.5	24.5
Flying particles on haulage				41		5.8	5.8				7		6.7	6.7				48		5.9	5.9
All other			12	254	325.0	28.2	41.6			2	40	150.0	20.1	26.3			14	294	300.0	27.1	39.5
Explosions of gas or coal dust:																					
Open lights											1		30.0	30.0				1		30.0	30.0
Matches, igniters, or smoking											3		27.0	27.0				3		27.0	27.0
Electric arc	2			21		50.6	567.9								2			21		50.6	567.9
High explosives								1			6		84.2	929.3	1			6		84.2	929.3
Blasting in a nonpermissible manner	15						6,000.0								15						6,000.0
All other				1		11.0	11.0				4		74.3	74.3				5		61.6	61.6
Explosives and breaking agents:																					
Industrial explosives:																					
Premature shot or blast				2		37.0	37.0			1		3,600.0		3,600.0			1	2	3,600.0	37.0	1,224.7
Delayed blast (including digging into)			1	2	3,000.0	16.5	1,011.0										1	2	3,000.0	16.5	1,011.0
Shot breaking through rib or pillar				22		17.6	17.6											22		17.6	17.6
Blown-out or windy shot				1		12.0	12.0											1		12.0	12.0
Flying fragments	1			80		26.3	100.0				7		35.0	35.0	1			87		27.0	94.9
Suffocation from explosives smoke				2		6.5	6.5				5		6.2	6.2				7		6.3	6.3
Caps or detonators				4		22.0	22.0				2		37.5	37.5				6		27.2	27.2
Insufficient warning or improper blasting lines	3			6		37.3	2,024.9				3		129.0	129.0	3			9		67.9	1,550.9
All other				2		125.5	125.5			1	3	750.0	10.7	195.5			1	5	750.0	56.6	172.2
Cardox				4		97.0	97.0											4		97.0	97.0
Airdox	1			61		27.9	124.2								1			61		27.9	124.2
Electricity (caused by current, including sparks or flashes):																					
Trolley wire or pole	4			32		10.9	676.4				5		5.4	5.4	4			37		10.2	594.5
Transformers, generators, etc				2		8.0	8.0											2		8.0	8.0
Other permanent or semipermanent lighting circuits	1			32		13.4	194.8				3		25.3	25.3	1			35		14.5	180.7
Locomotives or shuttle cars				32		23.2	23.2				2		11.0	11.0				34		22.4	22.4
Mining or loading machines				19		12.4	12.4											19		12.4	12.4
Cutout switches or junction boxes				14		16.1	16.1											14		16.1	16.1
Cables for mobile mining, loading, or haulage equipment	1			240		15.8	40.6				4		11.0	11.0	1			244		15.7	40.2
All other	5			35		10.1	758.9	1			6		16.8	871.6	6			41		11.1	775.6
Machinery:																					
While moving mining machines	4		17	194	829.4	49.4	221.8				3		19.0	19.0	4		17	197	829.4	48.9	219.0
While setting up mining machines			1	122	150.0	23.2	24.2										1	122	150.0	23.2	24.2
While operating mining machines	1		28	361	650.9	36.7	96.1				2		64.5	64.5	1		28	363	650.9	36.8	95.9
Belt conveyors	1		8	38	1,106.3	31.9	341.7				3		7.3	7.3	1		8	41	1,106.3	30.1	321.7
Chain, bucket, or shaker conveyors			9	69	866.7	34.4	130.5				16		36.1	36.1			9	85	866.7	34.8	114.4
Loading machines (including self-loading heads)	3		17	308	529.4	33.0	113.3				9		25.1	25.1	3		17	317	529.4	32.7	110.9

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TABLE 23.—*Number and average severity of injuries at coal mines in the United States, by kind of coal, principal injury agencies, general location, and degree of injury, 1954*—Continued

Injury agency and general location	Bituminous-coal mines							Anthracite mines							All coal mines						
	Number of injuries				Average severity			Number of injuries				Average severity			Number of injuries				Average severity		
	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries
		Total	Partial						Total	Partial						Total	Partial				
UNDERGROUND MINES—continued																					
Underground—Continued																					
Machinery—Continued																					
While moving loading machines or self-loading heads	5	.....	6	106	325.0	54.7	322.7	.....	.....	.....	4	.....	23.0	23.0	5	.....	6	110	325.0	53.6	312.8
Scraper conveyors	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	12	487.5	45.9	156.3	.....	.....	4	12	487.5	45.9	156.3
Power drills (except for installing roof bolts)	.....	.....	5	300	780.0	26.7	39.0	.....	.....	1	34	300.0	22.4	30.4	.....	.....	6	334	700.0	26.3	38.2
Power drills (used for installing roof bolts)	.....	.....	.....	53	.....	40.9	40.9	.....	.....	.....	3	.....	20.7	20.7	.....	.....	.....	56	.....	39.8	39.8
Power equipment (except drills) used for installing roof bolts	.....	.....	.....	17	.....	13.2	13.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17	.....	13.2	13.2
While moving any machine except mining or loading machines	.....	.....	5	106	1,440.0	33.2	96.6	.....	.....	.....	7	.....	25.7	25.7	.....	.....	5	113	1,440.0	32.7	92.4
Flying particles set in motion by machinery (except roof-bolting equipment)	.....	.....	.....	88	.....	13.9	13.9	.....	.....	.....	27	.....	4.0	4.0	.....	.....	.....	115	.....	11.6	11.6
Flying particles set in motion by roof-bolting equipment	.....	.....	.....	73	.....	7.6	7.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	73	.....	7.6	7.6
While moving, setting up, or operating continuous mining machines	.....	.....	1	11	300.0	61.4	81.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	11	300.0	61.4	81.3
All other	.....	.....	12	62	754.2	34.4	151.1	.....	.....	2	2	1,350.0	4.0	677.0	.....	.....	14	64	839.3	33.5	178.1
Suffocation (no flames or smoldering):																					
From foreign gases (gasoline fumes, etc.)	.....	.....	.....	6	.....	36.5	36.5	.....	.....	.....	2	.....	12.5	12.5	.....	.....	.....	8	.....	30.5	30.5
Mine fires and suffocation from fires:																					
Mine fires (coal or timber):																					
Initiated by electricity	.....	.....	.....	7	.....	39.7	39.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	.....	39.7	39.7
Other fires:																					
Belt conveyors	.....	.....	.....	1	.....	10.0	10.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	10.0	10.0
Equipment or material	1	.....	.....	4	.....	10.0	1,208.0	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	4	.....	10.0	1,208.0
Miscellaneous causes:																					
Flying particles from draft or wind	.....	.....	.....	3	.....	15.0	15.0	.....	.....	.....	5	.....	3.8	3.8	.....	.....	.....	8	.....	8.0	8.0
Acetylene or electric welding (burns, flashes, or flying particles)	.....	.....	.....	11	.....	25.5	25.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11	.....	25.5	25.5
Irritations and burns from battery fluid or other corrosive materials	.....	.....	.....	43	.....	13.7	13.7	.....	.....	.....	4	.....	4.0	4.0	.....	.....	.....	47	.....	12.9	12.9
All other	.....	.....	.....	86	.....	32.7	32.7	.....	.....	.....	11	.....	24.8	24.8	.....	.....	.....	97	.....	31.8	31.8
Total, underground	287	11	342	11,687	672.9	37.0	198.8	49	.....	48	2,359	906.8	26.4	162.8	336	11	390	14,046	701.7	35.2	192.8
Shaft and slope:																					
Falls of roof	.....	.....	.....	5	.....	87.8	87.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	87.8	87.8
Falls of face	.....	.....	.....	1	.....	30.0	30.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	30.0	30.0
Other falling materials or objects:																					
Cages	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9	.....	88.2	88.2	.....	.....	.....	9	.....	88.2	88.2
All other	.....	.....	.....	4	.....	60.8	60.8	.....	.....	.....	2	.....	3.0	3.0	.....	.....	.....	6	.....	41.5	41.5
Falls of persons:																					
Down shaft of slope	.....	.....	.....	2	.....	39.0	39.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	39.0	39.0
All other	.....	.....	.....	7	.....	24.9	24.9	.....	.....	.....	9	.....	21.1	21.1	.....	.....	.....	16	.....	22.8	22.8
Handling materials	.....	.....	.....	4	.....	32.5	32.5	.....	.....	.....	3	.....	27.3	27.3	.....	.....	.....	7	.....	30.3	30.3
Haulage:																					
Struck, run over, or squeezed between cars or motors	.....	.....	.....	8	.....	40.1	40.1	1	.....	.....	5	.....	56.8	1,047.3	1	.....	.....	13	.....	46.5	471.8
Squeezed between cars or motors and rib, timber, or roof	.....	.....	.....	5	.....	66.6	66.6	1	.....	.....	4	.....	32.0	1,225.6	1	.....	.....	9	.....	51.2	646.1

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Derailments	3			6		63.5	2,042.3				2		152.5	152.5	3			8		85.8	1,698.7
Runaways (cars or motors not under control)	1			1		85.0	3,042.5				1		33.0	33.0	1			2		59.0	2,039.3
All other				18		42.9	42.9				7		10.3	10.3				25		33.8	33.8
Machinery			1	2	75.0	43.0	53.7										1	2	75.0	43.0	53.7
All other			1	6	4,725.0	33.2	703.4				3		14.3	14.3			1	9	4,725.0	26.9	496.7
Total, shaft and slope	4		2	69	2,400.0	47.4	427.6	2			45		43.0	296.5	6		2	114	2,400.0	45.7	377.1
Surface:																					
Falling materials or objects:																					
Rolling, shifting, or sliding materials				13		20.3	20.3				5		10.2	10.2				18		17.5	17.5
All other				17		37.6	37.6				3		3.0	3.0				20		32.4	32.4
Slips or falls of persons:																					
On same level:																					
While handling materials				34		32.8	32.8				22		17.1	17.1				56		26.6	26.6
All others				104		26.4	26.4				19		33.8	33.8				123		27.5	27.5
From an elevation:																					
While handling materials	3			10		35.8	1,412.2	2			12		21.3	875.4	5			22		27.9	1,133.9
Due to failure of scaffolds, ladders, etc				14		69.1	69.1				6		56.5	56.5				20		65.3	65.3
All other	1			33		35.8	211.3				9		23.2	23.2	1			42		33.1	171.9
Handling materials:																					
Props, ties, or lumber			1	72	150.0	20.8	22.6			1	22	150.0	34.0	39.0			2	94	150.0	23.9	26.5
Coal			1	19	300.0	26.9	40.6			1	5	300.0	2.8	52.3			2	24	300.0	21.9	43.3
Rock or slate			2	59	225.0	20.1	26.8				12		14.6	14.6			2	71	225.0	19.1	24.8
Rails				28		25.6	25.6				1		60.0	60.0				29		26.8	26.8
Flying particles while handling all other materials				13		4.2	4.2				12		5.8	5.8				25		5.0	5.0
All other	1		3	226	1,150.0	29.3	69.9			3	72	125.0	26.3	30.2	1		6	298	637.5	28.6	60.2
Handtools:																					
All handtools			1	56	75.0	18.4	19.4				14		28.9	28.9			1	70	75.0	20.5	21.3
Flying particles from handtools or objects worked on			1	46	1,800.0	22.4	60.2				9		4.2	4.2			1	55	1,800.0	19.4	51.2
Stepping or kneeling on sharp or loose objects				32		25.9	25.9				7		10.1	10.1				39		23.1	23.1
Haulage:																					
Mine-gage haulage:																					
Struck, run over, or squeezed between rail equipment:																					
Coupling or uncoupling			10	34	450.0	49.4	140.5				1		21.0	21.0			10	35	450.0	48.6	137.8
Switching, spragging, blocking, or braking			1	5	375.0	35.2	91.8				2		4.0	4.0			1	7	375.0	26.3	69.9
Pulling, pushing, or dropping			1	5	300.0	31.2	76.0										1	5	300.0	31.2	76.0
Operating or riding				5		73.0	73.0											5		73.0	73.0
All other				8		17.0	17.0				1		41.0	41.0				9		19.7	19.7
Squeezed between rail equipment and construction:																					
Coupling or uncoupling				1		2.0	2.0											1		2.0	2.0
Switching, spragging, blocking, or braking				1		4.0	4.0				1		7.0	7.0				2		5.5	5.5
Pulling, pushing, or dropping				3		107.7	107.7											3		107.7	107.7
Operating or riding				4		12.8	12.8											4		12.8	12.8
All other				1		9.0	9.0				1		6.0	6.0				2		7.5	7.5
Derailments	2			17		39.6	667.0				2		30.5	30.5	2			19		38.6	606.4
Rerailing cars or motors			2	17	187.5	48.1	62.7				6		27.8	27.8			2	23	187.5	42.8	54.4
Falling, slipping, or jumping in or from rail equipment				20		33.7	33.7				4		52.8	52.8				24		36.9	36.9
Coupling or uncoupling (cars not moving)				8		21.8	21.8				2		11.5	11.5				10		19.7	19.7
Ropes or cables on haulage			4	11	272.0	47.1	107.1			1		300.0		300.0			5	11	277.6	47.1	119.1
All other	1		1	89	75.0	37.7	103.6			1	11	1,800.0	21.9	170.1	1		2	100	937.5	35.9	111.3
Standard-gage haulage (railway)	6	1	3	122	900.0	34.7	370.7	1		1	18	4,500.0	47.8	568.1	7	1	4	140	1,800.0	36.4	396.6
Trucks, tractors, automobiles, etc	3		2	42	300.0	17.5	411.4				4		19.8	19.8	3		2	46	300.0	17.7	380.7
Explosions of gas or coal dust	5			13		118.8	1,752.5								5			13		118.8	1,752.5
Electricity (caused by current, including sparks or flashes):																					
Transformers, generators, etc				4		42.8	42.8				1		14.0	14.0				5		37.0	37.0
Other permanent or semipermanent lighting circuits	1			8		21.8	686.0				1		46.0	46.0	1			9		24.4	622.0
Electric locomotives				9		14.8	14.8											9		14.8	14.8
Electric cut-out switches and junction boxes				6		14.3	14.3											6		14.3	14.3
All other				9		11.0	11.0											9		11.0	11.0

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TABLE 23.—*Number and average severity of injuries at coal mines in the United States, by kind of coal, principal injury agencies, general location, and degree of injury, 1954*—Continued

Injury agency and general location	Bituminous-coal mines							Anthracite mines							All coal mines						
	Number of injuries				Average severity			Number of injuries				Average severity			Number of injuries				Average severity		
	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries	Fatal	Permanent		Temporary total	Permanent partial	Temporary total	All injuries
		Total	Partial						Total	Partial						Total	Partial				
UNDERGROUND MINES—continued																					
Surface—Continued																					
Machinery:																					
Belt conveyors	2			16		53.8	714.5				2		21.0	21.0	2			18		50.2	645.2
Chain, shaker, or bucket conveyors			1	12	300.0	16.7	38.5			1		300.0		300.0			2	12	300.0	16.7	57.1
Stationary surface machinery			8	31	787.5	27.0	183.0			4	4	347.0	13.5	180.3			12	35	640.7	25.4	182.5
All other			4	52	1,087.5	23.1	99.1			3	22	650.0	25.9	100.8			7	74	900.0	23.9	99.6
Mine fires and suffocation from fires:																					
Other fires (electric cables, rags, etc.)				1		12.0	12.0				1		13.0	13.0				2		12.5	12.5
Burning or exploding oil, gasoline, etc				2		109.0	109.0	1			1		22.0	3,011.0	1			3		80.0	1,560.0
Miscellaneous causes:																					
Acetylene or electric welding (burns, flashes, or flying particles)				13		17.3	17.3				4		7.3	7.3				17		14.9	14.9
Irritations and burns from battery fluid or other corrosive materials				12		9.3	9.3				1		3.0	3.0				13		8.8	8.8
Burns from controlled fires				11		22.4	22.4				1		6.0	6.0				12		21.0	21.0
All other	2		2	36	562.5	24.4	350.1	1			7		51.4	795.0	3		2	43	562.5	28.8	424.2
Total, surface	27	1	48	1,404	589.9	29.8	160.9	5		16	328	691.4	25.1	141.3	32	1	64	1,732	615.3	28.9	157.2
Total, underground mines	318	12	392	13,160	671.5	36.3	196.0	56		64	2,732	852.9	26.5	162.4	374	12	456	15,892	697.0	34.6	190.2
STRIP MINES																					
Falls or slides of coal or overburden:																					
While mining	1			21		18.8	290.6				4		44.3	44.3	1			25		22.8	252.7
While loading	2			3		10.7	2,406.4								2			3		10.7	2,406.4
All other				5		8.4	8.4				1		33.0	33.0				6		12.5	12.5
Rushes, rolls, or slides of coal or rock				7		41.7	41.7											7		41.7	41.7
Other falling materials or objects	1		1	38	600.0	16.8	180.9			1	9	300.0	56.1	80.5	1		2	47	450.0	24.3	160.8
Slips or falls of persons:																					
On same level:																					
While handling materials				27		34.0	34.0				6		42.5	42.5				33		35.5	35.5
All other				95		29.6	29.6				7		58.4	58.4				102		31.6	31.6
From an elevation:																					
While handling materials				11		16.7	16.7				6		15.8	15.8				17		16.4	16.4
All other				73		34.3	34.3	1			8		26.9	690.6	1			81		33.6	106.4
Handling materials:																					
Props, ties, or lumber				27		15.1	15.1				1		23.0	23.0				28		15.4	15.4
Coal, rock, or slate				36		18.5	18.5				6		23.2	23.2				42		19.2	19.2
All other			1	194	300.0	18.3	19.7				31		21.7	21.7			1	225	300.0	18.7	20.0
Handtools:																					
All handtools				39		16.2	16.2				3		7.3	7.3				42		15.6	15.6
Flying particles from handtools or objects worked on				56		14.1	14.1				4		12.3	12.3				60		14.0	14.0
Stepping or kneeling on sharp or loose objects				29		13.6	13.6				3		17.7	17.7				32		14.0	14.0
Striking or bumping against objects				2		2.5	2.5											2		2.5	2.5
Haulage:																					
Mine-gage haulage				15		20.7	20.7				1		6.0	6.0				16		19.8	19.8
Standard-gage haulage (railway)		1	2	48	1,687.5	28.1	210.2				3		54.7	54.7		1	2	51	1,687.5	29.6	201.6
Trucks, tractors, automobiles, etc	2			107		33.9	143.3	3			21		9.7	758.5	5			128		29.9	254.3
Explosives:																					
Premature shot or blast	2			5		36.8	1,740.6								2			5		36.8	1,740.6
Flying fragments				9		11.2	11.2											9		11.2	11.2
All other				1		6.0	6.0				2		17.0	17.0				3		13.3	13.3

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Electricity (caused by current, including sparks or flashes):																					
Transformers, generators, etc.	1			2		3.0	2,002.0								1			2		3.0	2,002.0
Other permanent or semipermanent lighting circuits	2						6,000.0								2						6,000.0
All other				4		9.3	9.3				2		17.0	17.0				6		11.8	11.8
Machinery:																					
Power drills	1			31		26.1	212.8				6		50.3	50.3	1			37		30.0	187.1
Power shovels, draglines, bulldozers, etc.	3	1	8	111	815.6	31.0	276.2	2		1	21	281.0	17.1	526.7	5	1	9	132	756.2	28.8	317.1
Stationary surface machinery			1	20	150.0	15.1	21.5				1		40.0	40.0			1	21	150.0	16.3	22.4
All other			4	54	843.8	17.4	74.3			1	3	1,800.0	10.0	457.5			5	57	1,035.0	17.0	99.1
Mine fires and suffocation from fires:																					
Burning petroleum products or flammable liquids	1			9		24.6	622.1				2		34.5	34.5	1			11		26.4	524.2
All other											1		44.0	44.0				1		44.0	44.0
Miscellaneous causes:																					
Flying particles from draft or wind				5		22.6	22.6											5		22.6	22.6
Acetylene or electric welding (burns, flashes, or flying particles)				29		12.1	12.1				2		12.5	12.5				31		12.1	12.1
Burns from controlled fires				24		29.0	29.0				2		63.5	63.5				26		31.7	31.7
All other				26		40.6	40.6				1		21.0	21.0				27		39.9	39.9
Total, strip mines	16	2	17	1,163	842.6	23.9	125.3	6		3	157	793.7	26.2	256.0	22	2	20	1,320	835.3	24.2	141.2
WASHERIES																					
Falls of persons											2		35.0	35.0				2		35.0	35.0
Handling materials											2		14.0	14.0				2		14.0	14.0
Machinery											2		10.0	10.0				2		10.0	10.0
All other											5		5.2	5.2				5		5.2	5.2
Total, washeries											11		13.1	13.1				11		13.1	13.1
DREDGES																					
All causes											5		15.6	15.6				5		15.6	15.6
Grand total	334	14	409	14,323	678.7	35.3	190.3	62		67	2,905	850.3	26.5	166.7	396	14	476	17,228	702.8	33.8	186.4

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TABLE 24.—*Number of injuries, average severity, and injury rates at bituminous-coal mines in the United States, by part of body injured, 1953*

General location and part of body injured	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3] per thousand man-hours		Frequency rates[4] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
Underground mines:														
Underground (including shaft and slope):														
Head	81			740	740	821	5.3		23.6	613.2	1.48	0.05	0.25	2.28
Eye	1		10	977	987	988	6.4	1,800.0	12.5	36.6	.02	.09	(5)	3.01
Trunk	95	12	5	3,724	3,741	3,836	24.7	1,800.0	42.0	210.5	1.74	.72	.29	11.41
Hernia				216	216	216	1.4		62.4	62.4		.04		.66
Arm, including wrist	1		6	722	728	729	4.7	3,150.0	39.2	73.0	.02	.14	(5)	2.22
Hand and finger	1	1	343	2,862	3,206	3,207	20.6	367.1	25.0	65.3	.02	.62	(5)	9.78
Leg, including ankle	4	2	30	2,414	2,446	2,450	15.8	3,624.5	49.1	107.5	.07	.73	.01	7.45
Foot and toe			39	1,938	1,977	1,977	12.7	498.1	35.5	44.6		.27		6.03
Multiple	156	2	5	1,160	1,167	1,323	8.5	3,255.0	51.8	774.3	2.86	.27	.48	3.56
Not stated	10			1,703	1,703	1,713			38.3	73.1	.18	.20	.03	5.20
Total	349	17	438	16,456	16,911	17,260		722.0	37.2	181.0	6.39	3.14	1.06	51.59
Surface:														
Head	3			79	79	82	4.7		12.2	231.3	.26	.01	.04	1.12
Eye			1	144	145	145	8.2	1,800.0	10.9	23.2		.05		2.05
Trunk	8			391	391	399	22.7		28.6	148.3	.68	.16	.11	5.56
Hernia				32	32	32	1.8		50.8	50.8		.02		.46
Arm, including wrist			1	110	111	111	6.3	4,500.0	36.2	76.4		.12		1.55
Hand and finger			63	319	382	382	21.7	278.8	24.0	66.0		.36		5.44
Leg, including ankle	1	1	4	271	276	277	15.8	3,937.5	42.3	141.5	.09	.47	.01	3.63
Foot and toe			5	198	203	203	11.5	270.0	31.2	37.1		.11		2.89
Multiple	13		1	113	114	127	7.2	3,600.0	36.5	675.0	1.11	.11	.19	1.62
Not stated	2			143	143	145			28.6	110.9	.17	.06	.03	2.04
Total	27	1	75	1,800	1,876	1,903		594.2	29.3	139.5	2.31	1.47	.38	26.70
Total, underground mines	376	18	513	18,256	18,787	19,163		703.3	36.4	176.9	5.67	2.85	.94	47.20
Strip mines:														
Head	6			64	64	70	7.2		21.2	533.7	.78	.03	.13	1.38
Eye			1	66	67	67	6.9	1,800.0	9.8	36.6		.05		1.45
Trunk	4			268	268	272	27.8		19.8	107.8	.52	.11	.09	5.79
Hernia				23	23	23	2.4		54.7	54.7		.03		.50
Arm, including wrist			2	52	54	54	5.5	3,600.0	38.8	170.7		.20		1.17
Hand and finger			26	143	169	169	17.3	527.9	18.4	96.8		.35		3.65
Leg, including ankle	1		1	144	145	146	14.9	3,000.0	30.4	91.6	.13	.16	.02	3.34
Foot and toe			5	88	93	93	9.5	300.0	24.1	39.0		.08		2.01
Multiple	10			73	73	83	8.5		31.0	750.2	1.30	.05	.22	1.58
Not stated				369	369	369			21.7	21.7		.17		7.95
Total	21		35	1,290	1,325	1,346		777.9	23.3	136.1	2.72	1.24	.45	28.65
Grand total	397	18	548	19,546	20,112	20,509		708.1	35.6	174.2	5.36	2.68	.89	45.25

[1] All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages. Number of injuries for which part of body injured was not stated are excluded in calculating percentages. For underground injuries, 100 percent represents a total of 15,547 injuries; for surface, 100 percent represents a total of 1,758 injuries; and for strip mines, 100 percent represents a total of 977 injuries for which part of body was stated.

[2] A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.

[3] Number of days charged per thousand man-hours.

[4] Number of injuries per million man-hours.

[5] Less than 0.005.

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TABLE 25.—*Number of injuries, average severity, and injury rates at bituminous-coal mines in the United States, by part of body injured, 1954*

General location and part of body injured	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3] per thousand man-hours		Frequency rates[4] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
Underground mines:														
Underground (including shaft and slope):														
Head	52			569	569	621	5.7		27.9	528.0	1.29	0.07	0.21	2.35
Eye			5	732	737	737	6.7	1,234.8	10.7	19.0		.06		3.05
Trunk	78	8	4	2,669	2,681	2,759	25.3	1,125.0	41.4	228.7	1.93	.67	.32	11.08
Hernia				149	149	149	1.4		61.9	61.9		.04		.62
Arm, including wrist	1		7	495	502	503	4.6	3,651.4	38.0	100.1	.02	.18	(5)	2.07
Hand and finger			256	1,866	2,122	2,122	19.5	365.9	25.4	66.5		.58		8.77
Leg, including ankle	5	2	20	1,702	1,724	1,729	15.9	2,509.5	48.5	101.1	.12	.60	.02	7.12
Foot and toe			48	1,243	1,291	1,291	11.8	900.0	35.9	68.0		.36		5.34
Multiple	150	1	4	838	843	993	9.1	2,906.3	49.0	965.5	3.72	.24	.62	3.48
Not stated	5			1,493	1,493	1,498			38.5	58.4	.12	.24	.02	6.17
Total	291	11	344	11,756	12,111	12,402		682.9	37.0	200.1	7.22	3.04	1.20	50.05
Surface:														
Head	4			63	63	67	5.0		16.4	373.7	.43	.02	.07	1.13
Eye			1	96	97	97	7.2	1,800.0	14.6	33.0		.06		1.75
Trunk	9			328	328	337	25.0		32.2	191.6	.97	.19	.16	5.90
Hernia				40	40	40	3.0		47.4	47.4		.03		.72
Arm, including wrist			1	79	80	80	5.9	3,600.0	32.1	76.7		.11		1.44
Hand and finger			43	228	271	271	20.1	417.7	21.1	84.1		.41		4.89
Leg, including ankle			1	204	205	205	15.2	3,000.0	31.4	45.9		.17		3.69
Foot and toe		1	2	143	146	146	10.9	975.0	37.9	91.6		.24		2.63
Multiple	13			90	90	103	7.7		44.2	795.9	1.40	.07	.23	1.62
Not stated	1			133	133	134			28.4	72.9	.11	.07	.02	2.39
Total	27	1	48	1,404	1,453	1,480		589.9	29.8	160.9	2.92	1.37	.49	26.16
Total, underground mines	318	12	392	13,160	13,564	13,882		671.5	36.3	196.0	6.41	2.73	1.07	45.59
Strip mines:														
Head	2			44	44	46	5.4		12.7	273.0	.30	.01	.05	1.09
Eye				52	52	52	6.1		11.4	11.4		.01		1.29
Trunk	2			237	237	239	28.2		24.0	74.1	.30	.14	.05	5.90
Hernia				16	16	16	1.9		61.1	61.1		.02		.40
Arm, including wrist				61	61	61	7.2		33.7	33.7		.05		1.52
Hand and finger			14	110	124	124	14.6	583.9	16.9	80.9		.25		3.08
Leg, including ankle		1	2	161	164	164	19.4	3,000.0	27.2	99.9		.41		4.08
Foot and toe			1	70	71	71	8.4	150.0	19.6	21.5		.04		1.77
Multiple	12	1		61	62	74	8.7		29.9	1,078.7	1.79	.19	.30	1.54
Not stated				351	351	351			24.2	24.2		.21		8.73
Total	16	2	17	1,163	1,182	1,198		812.6	23 9	125.3	2.39	1.35	.40	29.40
Grand total	334	14	409	14,323	14,746	15,080		678.7	35.3	190.3	5.93	2.57	.99	43.66

[1] All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages. Number of injuries for which part of body injured was not stated are excluded in calculating percentages. For underground injuries, 100 percent represents a total of 10,904 injuries; for surface, 100 percent represents a total of 1,346 injuries; and for strip mines, 100 percent represents a total of 847 injuries for which part of body was stated.

[2] A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.

[3] Number of days charged per thousand man-hours.

[4] Number of injuries per million man-hours.

[5] Less than 0.005.

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TABLE 26.—*Number of injuries, average severity, and injury rates at Pennsylvania anthracite mines, by part of body injured, 1953*

General location and part of body injured	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3] per thousand man-hours		Frequency rates[4] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
Underground mines:														
Underground (including shaft and slope):														
Head	17			260	260	277	8.3		15.6	382.9	2.46	0.10	0.41	6.27
Eye			2	361	363	363	10.9	1,800.0	7.2	17.1		.15		8.76
Trunk	17	1		702	703	720	21.6		25.7	175.0	2.46	.58	.41	16.96
Hernia				26	26	26	.8		80.4	80.4		.05		.83
Arm, including wrist				190	190	190	5.7		23.7	23.7		.11		4.58
Hand and finger			29	622	651	651	19.5	471.1	25.6	45.5		.71		15.70
Leg, including ankle				483	483	483	14.5		35.7	35.7		.42		11.65
Foot and toe			2	333	335	335	10.0	1,237.5	24.8	32.0		.26		8.68
Multiple	24	1	1	266	268	292	8.8	300.0	39.7	550.9	3.47	.41	.58	6.47
Not stated	2			88	88	90			29.2	161.9	.29	.06	.05	2.12
Total	60	2	34	3,331	3,367	3,427		589.4	25.8	139.4	8.69	2.84	1.45	81.24
Surface (including washeries and dredges):														
Head	2			30	30	32	6.5		15.3	389.4	.61	.02	.10	1.52
Eye			1	49	50	50	10.1	1,800.0	8.8	44.6		.11		2.54
Trunk	1			101	101	102	20.7		25.8	84.4	.30	.13	.05	5.13
Hernia				19	19	19	3.9		75.6	75.6		.07		.97
Arm, including wrist				25	25	25	5.1		37.9	37.9		.05		1.27
Hand and finger			7	82	89	89	18.1	310.7	20.3	43.1		.20		4.52
Leg, including ankle				85	85	85	17.2		20.2	20.2		.09		4.32
Foot and toe			1	58	59	59	12.0	150.0	24.1	26.3		.08		3.00
Multiple	1			31	31	32	6.5		40.5	226.7	.30	.06	.05	1.53
Not stated				11	11	11			25.9	25.9		.01		.56
Total	4		9	491	500	504		458.3	24.8	80.0	1.22	.83	.20	25.41
Total, underground mines	64	2	43	3,822	3,867	3,931		561.9	25.6	131.8	6.28	2.20	1.05	63.27
Strip mines:														
Head				16	16	16	6.0		17.4	17.4		.03		1.96
Eye				13	13	13	4.9		5.2	5.2		.01		1.59
Trunk				62	62	62	23.2		19.0	19.0		.14		7.60
Hernia				4	4	4	1.5		61.3	61.3		.03		.49
Arm, including wrist				23	23	23	8.6		31.5	31.5		.09		2.82
Hand and finger			6	46	52	52	19.5	425.0	18.7	65.6		.42		6.38
Leg, including ankle				46	46	46	17.2		29.0	29.0		.16		5.64
Foot and toe			1	30	31	31	11.6	225.0	17.4	24.1		.09		3.80
Multiple				20	20	20	7.5		29.2	29.2		.07		2.45
Not stated				12	12	12			19.8	19.8		.03		1.47
Total			7	272	279	279		396.4	22.2	31.6		1.08		34.22
Grand total	64	2	50	4,094	4,146	4,210		538.8	25.4	125.2	5.54	2.06	.92	59.85

[1] All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages. Number of injuries for which part of body injured was not stated are excluded in calculating percentages. For underground injuries, 100 percent represents a total of 3,337 injuries; for surface, 100 percent represents a total of 493 injuries; and for strip mines, 100 percent represents a total of 267 injuries for which part of body was stated.

[2] A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.

[3] Number of days charged per thousand man-hours.

[4] Number of injuries per million man-hours.

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TABLE 27.—*Number of injuries, average severity, and injury rates at Pennsylvania anthracite mines, by part of body injured, 1954*

General location and part of body injured	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3] per thousand man-hours		Frequency rates[4] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
Underground mines:														
Underground (including shaft and slope):														
Head	20			183	183	203	8.1		14.3	604.0	4.16	0.09	0.69	6.34
Eye			2	264	266	266	10.6	1,800.0	5.2	18.7		.17		9.21
Trunk	18			488	488	506	20.2		27.9	240.4	3.74	.47	.62	16.90
Hernia				25	25	25	1.0		67.1	67.1		.06		.87
Arm, including wrist			1	97	98	98	3.9	3,600.0	32.9	69.3		.24		3.39
Hand and finger			37	493	530	530	21.2	395.9	24.8	50.7		.93		18.36
Leg, including ankle	1		5	381	386	387	15.5	3,720.0	41.2	104.1	.21	1.19	.03	13.37
Foot and toe			3	280	283	283	11.3	1,025.0	23.3	33.9		.33		9.80
Multiple	11			193	193	204	8.2		38.2	359.7	2.29	.26	.38	6.68
Not stated	1					1				6,000.0	.21		.03	
Total	51		48	2,404	2,452	2,503		906.8	26.7	165.3	10.60	3.73	1.77	84.92
Surface (including washeries and dredges):														
Head	2			27	27	29	7.9		7.7	421.0	.78	.01	.13	1.77
Eye			1	35	36	36	9.9	1,800.0	8.4	58.1		.14		2.35
Trunk	1			92	92	93	25.5		21.0	85.2	.39	.13	.07	6.02
Hernia				7	7	7	1.9		119.1	119.1		.05		.46
Arm, including wrist				21	21	21	5.8		43.0	43.0		.06		1.37
Hand and finger			14	60	74	74	20.3	340.2	22.4	82.5		.40		4.84
Leg, including ankle			1	51	52	52	14.2	4,500.0	27.3	113.3		.39		3.40
Foot and toe				34	34	34	9.3		23.1	23.1		.05		2.22
Multiple	2			17	17	19	5.2		45.4	672.2	.78	.05	.13	1.11
Not stated														
Total	5		16	344	360	365		691.4	24.6	135.7	1.96	1.28	.33	23.55
Total, underground mines	56		64	2,748	2,812	2,868		852.9	26.5	161.6	7.61	2.88	1.27	63.68
Strip mines:														
Head	3			9	9	12	7.3		31.3	1,523.5	2.97	.05	.49	1.48
Eye			1	10	11	11	6.7	1,800.0	6.7	169.7		.31		1.81
Trunk				39	39	39	23.6		16.3	16.3		.11		6.43
Hernia				2	2	2	1.2		134.5	134.5		.04		.33
Arm, including wrist				14	14	14	8.5		20.0	20.0		.05		2.31
Hand and finger			2	27	29	29	17.6	290.5	20.6	39.2		.19		4.78
Leg, including ankle	1			25	25	26	15.8		48.9	277.8	.99	.20	.16	4.12
Foot and toe				20	20	20	12.1		23.1	23.1		.08		3.30
Multiple	2			10	10	12	7.3		31.5	1,026.3	1.98	.05	.33	1.65
Not stated				1	1	1			17.0	17.0		(5)		.16
Total	6		3	157	160	166		793.7	26.2	256.0	5.94	1.07	.99	26.39
Grand total	62		67	2,905	2,972	3,034		850.3	26.5	166.7	7.41	2.66	1.23	59.18

[1] All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages. Number of injuries for which part of body injured was not stated are excluded in calculating percentages. For underground injuries, 100 percent represents a total of 2,502 injuries; for surface, 100 percent represents a total of 365 injuries; and for strip mines, 100 percent represents a total of 165 injuries for which part of the body was stated.

[2] A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.

[3] Number of days charged per thousand man-hours.

[4] Number of injuries per million man-hours.

[5] Less than 0.005.

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TABLE 28.—*Number of injuries, average severity, and injury rates at bituminous-coal mines (underground and surface works) in the United States, by percentage groups of coal loaded mechanically and part of body injured, 1953*

Coal loaded mechanically, by percentage groups and part of body injured	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3] per thousand man-hours		Frequency rates[4] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
All hand loading:														
Head	5			101	101	106	3.8		26.4	308.2	0.55	0.05	0.09	1.85
Eye	1			157	157	158	5.6		12.7	50.6	.11	.04	.02	2.87
Trunk	16	4		698	702	718	25.7		42.0	207.9	1.75	.97	.29	12.83
Hernia				47	47	47	1.7		56.0	56.0		.05		.86
Arm, including wrist			3	139	142	142	5.1	3,700.0	34.7	112.2		.29		2.60
Hand and finger			67	605	672	672	24.0	258.0	23.6	47.0		.58		12.28
Leg, including ankle	2		4	428	432	434	15.5	4,125.0	46.8	111.8	.22	.67	.04	7.90
Foot and toe			5	334	339	339	12.1	645.0	36.9	45.9		.28		6.20
Multiple	33		1	147	148	181	6.5	3,600.0	45.0	1,150.4	3.62	.19	.60	2.70
Not stated	2			249	249	251			36.8	84.3	.22	.17	.04	4.55
Total	59	4	80	2,905	2,989	3,048		646.4	35.7	175.0	6.47	3.28	1.08	54.63
1 to 19 percent:														
Head				17	17	17	4.4		9.2	9.2		(5)		2.53
Eye				17	17	17	4.4		14.2	14.2		.04		2.53
Trunk	2			88	88	90	23.1		48.8	181.0	1.79	.64	.30	13.12
Hernia				2	2	2	.5		86.0	86.0		.03		.30
Arm, including wrist				29	29	29	7.5		29.3	29.3		.13		4.32
Hand and finger			8	69	77	77	19.8	375.0	24.6	61.0		.70		11.48
Leg, including ankle			1	68	69	69	17.7	3,000.0	51.4	94.1		.97		10.29
Foot and toe				60	60	60	15.4		27.6	27.6		.25		8.95
Multiple	3		1	24	25	28	7.2	3,300.0	42.4	797.1	2.68	.64	.45	3.73
Not stated				3	3	3			34.3	34.3		.02		.45
Total	5		10	377	387	392		930.0	36.3	135.2	4.47	3.43	.75	57.70
20 to 39 percent:														
Head	1			26	26	27	3.1		25.8	247.1	.46	.05	.08	1.98
Eye			1	45	46	46	5.3	1,800.0	19.3	58.0		.20		3.50
Trunk	5			223	223	228	26.2		36.9	167.7	2.28	.63	.38	16.97
Hernia				8	8	8	.9		63.8	63.8		.04		.61
Arm, including wrist	1			35	35	36	4.1		40.2	205.8	.46	.11	.08	2.66
Hand and finger			16	187	203	203	23.4	293.9	24.3	45.6		.70		15.45
Leg, including ankle			2	127	129	129	14.8	4,500.0	46.2	115.2		1.13		9.82
Foot and toe			2	117	119	119	13.7	225.0	32.2	35.4		.32		9.06
Multiple	10			63	63	73	8.4		58.0	871.9	4.57	.28	.76	4.79
Not stated				47	47	47			36.4	36.4		.13		3.58
Total	17		21	878	899	916		759.7	35.6	162.9	7.76	3.59	1.29	68.41
40 to 59 percent:														
Head	4			27	27	31	5.1		15.0	787.2	2.08	.04	.35	2.34
Eye				41	41	41	6.8		11.0	11.0		.04		3.56
Trunk	2	1		147	148	150	24.9		50.7	169.7	1.04	1.17	.17	12.85
Hernia				11	11	11	1.8		64.0	64.0		.06		.96
Arm, including wrist				23	23	23	3.8		38.3	38.3		.08		2.00
Hand and finger			21	127	148	148	24.5	384.0	29.2	79.6		1.02		12.85
Leg, including ankle				78	78	78	12.9		49.4	49.4		.33		6.77
Foot and toe			3	78	81	81	13.4	250.0	47.6	55.1		.39		7.03
Multiple	3			37	37	40	6.6		26.2	474.3	1.56	.08	.26	3.21
Not stated				14	14	14			39.1	39.1		.05		1.22
Total	9	1	24	583	608	617		367.2	38.9	148.3	4.69	3.26	.78	52.80
60 to 79 percent:														
Head	3			16	16	19	4.8		14.6	959.7	1.70	.02	.28	1.51
Eye			1	17	18	18	4.5	1,800.0	23.6	122.3		.21		1.70
Trunk	1			88	88	89	22.5		38.0	105.0	.57	.32	.09	8.30
Hernia				5	5	5	1.3		69.2	69.2		.03		.47
Arm, including wrist				29	29	29	7.3		47.2	47.2		.13		2.73
Hand and finger			7	87	94	94	23.7	375.0	31.2	56.8		.50		8.86
Leg, including ankle			1	73	74	74	18.7	3,000.0	65.2	104.8		.73		6.98
Foot and toe				38	38	38	9.6		33.6	33.6		.12		3.58
Multiple	4			26	26	30	7.6		48.3	841.9	2.26	.12	.38	2.45
Not stated	1			3	3	4			47.7	1,535.8	.57	.01	.09	.28
Total	9		9	382	391	400		825.0	41.5	193.2	5.09	2.19	.85	36.86

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TABLE 28.—*Number of injuries, average severity, and injury rates at bituminous-coal mines (underground and surface works) in the United States, by percentage groups of coal loaded mechanically and part of body injured, 1953*—Continued

Coal loaded mechanically, by percentage groups and part of body injured	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3] per thousand man-hours		Frequency rates[4] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
80 to 99 percent:														
Head	7			63	63	70	6.0		23.6	621.2	1.67	0.06	0.28	2.51
Eye				57	57	57	4.9		18.3	18.3		.04		2.27
Trunk	7	2	1	263	266	273	23.4	2,400.0	44.0	249.0	1.67	1.03	.28	10.58
Hernia				14	14	14	1.2		74.6	74.6		.04		.56
Arm, including wrist				54	54	54	4.6		36.1	36.1		.08		2.15
Hand and finger			37	250	287	287	24.6	245.3	25.4	53.7		.61		11.41
Leg, including ankle			1	188	189	189	16.2	4,500.0	58.7	82.2		.62		7.52
Foot and toe			3	124	127	127	10.9	350.0	34.4	41.8		.21		5.05
Multiple	10	1		86	87	97	8.3		54.6	728.8	2.39	.43	.40	3.46
Not stated	2			72	72	74			37.7	198.8	.48	.11	.08	2.86
Total	26	3	42	1,171	1,216	1,242		405.4	39.4	190.9	6.20	3.23	1.03	48.36
100 percent:														
Head	45			497	497	542	5.7		21.7	518.0	1.23	.05	.20	2.26
Eye			8	672	680	680	7.1	1,800.0	11.5	32.5		.10		3.09
Trunk	53	5	4	2,220	2,229	2,282	24.0	1,650.0	39.8	194.1	1.45	.57	.24	10.13
Hernia				144	144	144	1.5		60.7	60.7		.04		.65
Arm, including wrist			4	442	446	446	4.7	3,075.0	41.5	68.7		.14		2.03
Hand and finger	1	1	214	1,612	1,827	1,828	19.2	414.0	24.5	76.7	.03	.61	(5)	8.30
Leg, including ankle	3	2	22	1,479	1,503	1,506	15.8	3,408.4	48.4	117.3	.08	.72	.01	6.83
Foot and toe			31	1,210	1,241	1,241	13.0	493.5	34.6	46.1		.26		5.64
Multiple	78		4	777	781	859	9.0	3,243.8	51.8	606.8	2.13	.24	.35	3.55
Not stated	2			156	156	158			38.6	114.1	.05	.03	.01	.71
Total	182	8	287	9,209	9,504	9,686		784.5	36.2	175.3	4.96	2.76	.83	43.19
Not stated:														
Head	19			70	70	89	6.1		28.9	1,303.6	2.26	.04	.38	1.38
Eye			1	108	109	109	7.4	1,800.0	8.9	25.3		.05		2.16
Trunk	15			363	363	378	25.7		39.9	276.4	1.78	.29	.30	7.18
Hernia				16	16	16	1.1		56.1	56.1		.02		.32
Arm, including wrist				74	74	74	5.0		34.9	34.9		.05		1.46
Hand and finger			35	234	269	269	18.3	267.9	26.8	58.1		.31		5.32
Leg, including ankle		1	3	232	236	236	16.1	4,500.0	39.2	121.2		.57		4.67
Foot and toe				165	165	165	11.2		35.2	35.2		.11		3.26
Multiple	25	1		108	109	134	9.1		51.8	1,205.9	2.97	.23	.49	2.16
Not stated	4			1,301	1,301	1,305			37.6	55.9	.47	.97	.08	25.74
Total	63	2	39	2,671	2,712	2,775		632.7	36.2	184.3	7.48	2.64	1.25	53.65
Surface[6]	6		1	80	81	87		750.0	22.9	443.4	6.38	.46	1.06	14.36
Grand total	376	18	513	18,256	18,787	19,163		703.3	36.4	176.9	5.67	2.85	.94	47.20

[1] All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages. Number of injuries for which part of body injured was not stated are excluded in calculating percentages. For all hand-loading injuries, 100 percent represents a total of 2,797 injuries; for 1 to 19 percent mechanical-loading injuries, 100 percent represents a total of 389 injuries; for 20 to 39 percent mechanical-loading injuries, 100 percent represents a total of 869 injuries; for 40 to 59 percent mechanical-loading injuries, 100 percent represents a total of 603 injuries; for 60 to 79 percent mechanical-loading injuries, 100 percent represents a total of 396 injuries; for 80 to 99 percent mechanical-loading injuries, 100 percent represents a total of 1,168 injuries; for 100 percent mechanical-loading injuries, 100 percent represents a total of 9,528 injuries; and for the group not stating the percent of mechanization, 100 percent represents a total of 1,470 injuries.

[2] A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.

[3] Number of days charged per thousand man-hours.

[4] Number of injuries per million man-hours.

[5] Less than 0.005.

[6] Data on 49 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 29.—*Number of injuries, average severity, and injury rates at bituminous-coal mines (underground and surface works) in the United States, by percentage groups of coal loaded mechanically and part of body injured, 1954*

Coal loaded mechanically, by percentage groups and part of body injured	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3] per thousand man-hours		Frequency rates[4] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
All hand loading:														
Head	8			40	40	48	5.0		16.9	1,014.1	1.91	0.03	0.32	1.59
Eye				49	49	49	5.1		11.9	11.9		.02		1.95
Trunk	8	2		249	251	259	27.0		38.2	268.4	1.91	.86	.32	10.00
Hernia				14	14	14	1.5		53.9	53.9		.03		.55
Arm, including wrist			1	47	48	48	5.0	4,500.0	33.5	126.6		.24		1.91
Hand and finger			22	172	194	194	20.3	482.4	28.4	79.9		.62		7.73
Leg, including ankle	1	1	1	146	148	149	15.6	4,500.0	48.1	157.9	.24	.70	.04	5.90
Foot and toe			2	121	123	123	12.8	1,725.0	39.1	66.6		.33		4.90
Multiple	23			51	51	74	7.7		46.5	1,896.9	5.50	.09	.92	2.03
Not stated				179	179	179			40.1	40.1		.29		7.13
Total	40	3	26	1,068	1,097	1,137		887.0	36.8	281.8	9.56	3.20	1.59	43.71
1 to 19 percent:														
Head				8	8	8	3.3		24.6	24.6		.05		2.03
Eye				23	23	23	9.3		10.3	10.3		.06		5.85
Trunk	1			51	51	52	21.1		24.2	139.1	1.53	.31	.25	12.97
Hernia				2	2	2	.8		101.0	101.0		.05		.51
Arm, including wrist				12	12	12	4.9		22.5	22.5		.07		3.05
Hand and finger			12	54	66	66	26.8	368.8	19.0	82.6		1.39		16.79
Leg, including ankle				45	45	45	18.3		21.2	21.2		.24		11.44
Foot and toe				27	27	27	11.0		46.5	46.5		.32		6.87
Multiple	3			8	8	11	4.5		25.3	1,654.7	4.58	.05	.76	2.03
Not stated														
Total	4		12	230	242	246		368.8	24.3	138.2	6.10	2.54	1.02	61.55
20 to 39 percent:														
Head	1			19	19	20	6.5		30.1	328.6	1.40	.13	.23	4.44
Eye				22	22	22	7.1		10.4	10.4		.05		5.15
Trunk	3			73	73	76	24.6		43.5	278.6	4.21	.74	.70	17.07
Hernia				4	4	4	1.3		61.5	61.5		.06		.94
Arm, including wrist				16	16	16	5.2		23.9	23.9		.09		3.74
Hand and finger			2	61	63	63	20.4	225.0	32.1	38.3		.56		14.74
Leg, including ankle				52	52	52	16.8		44.4	44.4		.54		12.16
Foot and toe				32	32	32	10.4		28.6	28.6		.21		7.48
Multiple	2			22	22	24	7.8		63.2	557.9	2.81	.33	.47	5.15
Not stated	1			13	13	14			41.0	466.6	1.40	.12	.23	3.04
Total	7		2	314	316	323		225.0	37.3	167.7	9.82	2.84	1.64	73.91
40 to 59 percent:														
Head				14	14	14	6.0		19.0	19.0		.06		3.07
Eye				32	32	32	13.7		6.8	6.8		.05		7.02
Trunk	3			48	48	51	21.8		45.9	396.1	3.95	.48	.66	10.53
Hernia				4	4	4	1.7		52.3	52.3		.05		.88
Arm, including wrist				15	15	15	6.4		25.3	25.3		.08		3.29
Hand and finger			3	41	44	44	18.8	175.0	21.9	32.3		.31		9.65
Leg, including ankle	1		1	32	33	34	14.5	75.0	40.0	216.4	1.32	.30	.22	7.24
Foot and toe			1	29	30	30	12.8	300.0	29.6	38.6		.25		6.58
Multiple	1			9	9	10	4.3		71.3	664.2	1.32	.14	.22	1.97
Not stated				7	7	7			33.7	33.7		.05		1.54
Total	5		5	231	236	241		180.0	31.1	158.0	6.58	1.77	1.10	51.76
60 to 79 percent:														
Head				19	19	19	6.0		31.3	31.3		.08		2.53
Eye				20	20	20	6.3		11.9	11.9		.03		2.77
Trunk	2			73	73	75	23.5		31.3	190.5	1.66	.32	.28	10.10
Hernia				6	6	6	1.9		58.7	58.7		.05		.53
Arm, including wrist				15	15	15	4.7		45.7	45.7		.09		2.08
Hand and finger			7	52	59	59	18.5	632.1	32.1	103.3		.84		8.17
Leg, including ankle				65	65	65	20.4		56.8	56.8		.51		9.00
Foot and toe				41	41	41	12.9		48.9	48.9		.28		5.68
Multiple	2			17	17	19	6.0		53.5	679.5	1.66	.13	.28	2.35
Not stated				4	4	4			7.0	7.0		(5)		.55
Total	4		7	312	319	323		632.1	39.9	126.6	3.32	2.34	.55	44.16

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TABLE 29.—*Number of injuries, average severity, and injury rates at bituminous-coal mines (underground and surface works) in the United States, by percentage groups of coal loaded mechanically and part of body injured, 1954*—Continued

Coal loaded mechanically, by percentage groups and part of body injured	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3] per thousand man-hours		Frequency rates[4] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
80 to 99 percent:														
Head	5			35	35	40	5.4		28.9	775.3	1.88	0.06	0.31	2.19
Eye				48	48	48	6.5		15.4	15.4		.05		3.01
Trunk	7			160	160	167	22.8		50.6	300.0	2.63	.51	.44	10.03
Hernia				11	11	11	1.5		54.8	54.8		.04		.69
Arm, including wrist	1			36	36	37	5.0		39.9	200.9	.38	.09	.06	2.26
Hand and finger			14	169	183	183	24.9	296.4	24.3	45.1		.52		11.47
Leg, including ankle			1	110	111	111	15.1	2,400.0	43.1	64.3		.45		6.96
Foot and toe			2	82	84	84	11.4	1,275.0	49.5	78.6		.41		5.26
Multiple	6			47	47	53	7.2		58.7	731.3	2.26	.17	.38	2.95
Not stated				14	14	14			44.9	44.9		.04		.88
Total	19		17	712	729	748		535.3	39.6	202.2	7.14	2.34	1.19	45.68
100 percent:														
Head	33			441	441	474	5.8		26.5	442.4	1.10	.06	.18	2.45
Eye			5	555	560	560	6.9	1,558.8	10.8	21.6		.08		3.11
Trunk	49	5	4	2,026	2,035	2,084	25.6	1,125.0	39.2	195.8	1.63	.63	.27	11.31
Hernia				125	125	125	1.5		58.7	58.7		.04		.69
Arm, including wrist			7	364	371	371	4.6	3,522.9	36.2	102.0		.21		2.06
Hand and finger			201	1,309	1,510	1,510	18.5	319.2	23.8	67.1		.56		8.39
Leg, including ankle	3	1	18	1,246	1,265	1,268	15.6	2,567.5	47.5	102.1	.10	.62	.02	7.03
Foot and toe		1	41	923	965	965	11.8	810.4	33.9	73.1		.39		5.36
Multiple	104	1	3	680	684	788	9.7	2,300.0	48.7	850.2	3.47	.26	.58	3.80
Not stated	3			143	143	146			35.9	158.4	.10	.03	.02	.79
Total	192	8	279	7,812	8,099	8,291		693.5	35.5	201.5	6.10	2.88	1.07	45.02
Not stated:														
Head	9			54	54	63	5.2		34.7	886.9	1.04	.04	.17	1.04
Eye			1	69	70	70	5.7	180.0	11.9	14.3		.02		1.35
Trunk	13	1		298	299	312	25.6		47.6	314.7	1.51	.39	.25	5.78
Hernia				21	21	21	1.7		63.1	63.1		.03		.41
Arm, including wrist				61	61	61	5.0		53.2	53.2		.06		1.18
Hand and finger			36	226	262	262	21.5	443.8	27.8	85.0		.43		5.06
Leg, including ankle				195	195	195	16.0		47.6	47.6		.18		3.77
Foot and toe			4	123	127	127	10.4	1,406.3	38.6	81.7		.20		2.45
Multiple	22		1	85	86	108	8.9	4,725.0	39.8	1,297.3	2.55	.16	.43	1.66
Not stated	2			1,266	1,266	1,268			37.5	46.9	.23	.92	.04	24.46
Total	46	1	42	2,398	2,441	2,487		631.1	38.6	161.3	5.33	2.42	.89	47.16
Surface[6]	1		2	83	85	86		450.0	30.5	109.6	1.25	.71	.21	17.67
Grand total	318	12	392	13,160	13,564	13,882		671.5	36.3	196.0	6.41	2.73	1.07	45.59

[1] All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages. Number of injuries for which part of body injured was not stated are excluded in calculating percentages. For all hand-loading injuries, 100 percent represents a total of 958 injuries; for 1 to 19 percent mechanical-loading injuries, 100 percent represents a total of 246 injuries; for 20 to 39 percent mechanical-loading injuries, 100 percent represents a total of 309 injuries, for 40 to 59 percent mechanical-loading injuries, 100 percent represents a total of 234 injuries; for 60 to 79 percent mechanical-loading injuries, 100 percent represents a total of 319 injuries; for 80 to 99 percent mechanical-loading injuries, 100 percent represents a total of 734 injuries; for 100 percent mechanical-loading injuries, 100 percent represents a total of 8,145 injuries; and for the group not stating the percent of mechanization, 100 percent represents a total of 1,219 injuries.

[2] A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.

[3] Number of days charged per thousand man-hours.

[4] Number of injuries per million man-hours.

[5] Less than 0.005.

[6] Data on 51 surface installations (preparation plants and general repair shops) which could not be assigned to any single underground mine.

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TABLE 30.—*Number of injuries, average severity, and injury rates at Pennsylvania anthracite mines (underground and surface works), by percentage groups of coal loaded mechanically and part of body injured, 1953*

Coal loaded mechanically, by percentage groups and part of body injured	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3] per thousand man-hours		Frequency rates[4] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
All hand loading:														
Head	4			23	23	27	7.3		16.4	902.9	3.55	0.06	0.59	3.41
Eye			1	28	29	29	7.8	1,800.0	9.4	71.1		.31		4.50
Trunk	2			87	87	89	24.0		31.7	165.9	1.78	.41	.30	12.99
Hernia				10	10	10	2.7		77.9	77.9		.12		1.48
Arm, including wrist				18	18	18	4.9		31.1	31.1		.08		2.67
Hand and finger			4	46	50	50	13.5	937.5	25.2	98.2		.73		7.41
Leg, including ankle				66	66	66	17.8		36.9	36.9		.36		9.75
Foot and toe				55	55	55	14.8		28.8	28.8		.23		8.15
Multiple	5			22	22	27	7.3		34.9	1,139.6	4.44	.11	.74	3.25
Not stated				3	3	3			22.7	22.7		.01		.44
Total	11		5	358	363	374		1,110.0	30.0	220.1	9.78	2.42	1.63	53.77
1 to 19 percent:														
Head				51	51	51	7.8		15.4	15.4		.08		5.07
Eye				57	57	57	8.7		8.8	8.8		.05		5.47
Trunk	2			157	157	159	24.3		30.4	105.5	1.19	.47	.20	15.52
Hernia				10	10	10	1.5		106.2	106.2		.11		.99
Arm, including wrist				41	41	41	6.3		32.5	32.5		.13		4.06
Hand and finger			7	111	118	118	18.0	171.4	34.0	42.1		.49		11.74
Leg, including ankle				93	93	93	14.2		41.4	41.4		.38		9.25
Foot and toe			2	70	72	72	11.0	112.5	16.5	19.1		.14		7.16
Multiple	1			53	53	54	8.2		36.7	147.1	.60	.19	.10	5.27
Not stated														
Total	3		9	643	652	655		158.3	29.8	58.9	1.79	2.05	.30	64.85
20 to 39 percent:														
Head	1			48	48	49	7.5		19.5	141.6	.62	.10	.10	4.97
Eye				81	81	81	12.4		5.0	5.0		.04		8.38
Trunk	2	1		103	104	106	16.3		26.6	195.7	1.24	.90	.21	10.76
Hernia				3	3	3	.5		67.7	67.7		.02		.31
Arm, including wrist				42	42	42	6.5		23.3	23.3		.10		4.35
Hand and finger			5	136	141	141	21.7	360.0	25.0	36.8		.54		14.59
Leg, including ankle				104	104	104	16.0		39.5	39.5		.42		10.75
Foot and toe				66	66	66	10.1		24.7	24.7		.17		6.83
Multiple	6			53	53	59	9.1		26.7	631.2	3.73	.15	.62	5.49
Not stated	1					1				6,000.0	.62		.10	
Total	10	1	5	636	642	652		360.0	24.9	128.2	6.21	2.44	1.04	66.45
40 to 59 percent:														
Head	5			52	52	57	9.0		10.4	535.8	3.71	.07	.62	6.44
Eye			1	87	88	88	14.0	1,800.0	5.0	25.4		.28		10.89
Trunk	5			106	106	111	17.6		23.2	292.5	3.71	.30	.62	13.12
Hernia				2	2	2	.3		58.0	58.0		.01		.25
Arm, including wrist				32	32	32	5.1		14.6	14.6		.06		3.96
Hand and finger			5	134	139	139	22.1	225.0	24.1	31.3		.54		17.21
Leg, including ankle				87	87	87	13.8		31.7	31.7		.34		10.77
Foot and toe			1	50	51	51	8.1	2,400.0	25.6	72.1		.46		6.31
Multiple	3			60	60	63	10.0		47.8	331.3	2.23	.36	.37	7.46
Not stated														
Total	13		7	610	617	630		760.7	23.2	154.7	9.66	2.41	1.61	76.37
60 to 79 percent:														
Head	1			5	5	6	6.5		73.4	1,061.2	3.22	.20	.54	2.69
Eye				5	5	5	5.4		4.2	4.2		.01		2.69
Trunk				31	31	31	33.3		18.0	18.0		.30		16.65
Hernia				1	1	1	1.1		90.0	90.0		.05		.54
Arm, including wrist				3	3	3	3.2		54.3	54.3		.09		1.61
Hand and finger			1	16	17	17	18.3	300.0	42.7	57.8		.53		9.13
Leg, including ankle				16	16	16	17.2		45.8	45.8		.39		8.59
Foot and toe				10	10	10	10.8		77.0	77.0		.41		5.37
Multiple				4	4	4	4.3		106.0	106.0		.23		2.15
Not stated	1			13	13	14			39.1	464.9	3.22	.27	.54	6.95
Total	2		1	104	105	107		300.0	41.5	155.3	6.44	2.48	1.07	56.39

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TABLE 30.—*Number of injuries, average severity, and injury rates at Pennsylvania anthracite mines (underground and surface works), by percentage groups of coal loaded mechanically and part of body injured, 1953*—Continued

Coal loaded mechanically, by percentage groups and part of body injured	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3] per thousand man-hours		Frequency rates[4] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
80 to 99 percent:														
Head	2			46	46	48	7.3		9.9	259.5	1.14	0.04	0.19	4.36
Eye			1	85	86	86	13.0	1,800.0	9.5	30.3		.25		8.15
Trunk	2			119	119	121	18.3		26.5	125.3	1.14	.30	.19	11.28
Hernia				4	4	4	.6		62.8	62.8		.02		.38
Arm, including wrist				33	33	33	5.0		25.1	25.1		.08		3.13
Hand and finger			7	142	149	149	22.5	746.4	25.0	58.9		.83		14.12
Leg, including ankle				93	93	93	14.0		28.6	28.6		.25		8.81
Foot and toe				75	75	75	11.3		23.8	23.8		.17		7.11
Multiple	5	1	1	46	48	53	8.0	300.0	49.3	727.7	2.84	.81	.47	4.55
Not stated				1	1	1			18.0	18.0		(5)		.09
Total	9	1	9	644	654	663		813.9	24.5	125.3	5.12	2.76	.85	61.98
100 percent:														
Head				1	1	1	3.7		9.0	9.0		.02		2.41
Eye				5	5	5	18.5		8.4	8.4		.10		12.03
Trunk				4	4	4	14.8		18.3	18.3		.18		9.62
Hernia														
Arm, including wrist				2	2	2	7.4		54.0	54.0		.26		4.81
Hand and finger				5	5	5	18.5		15.8	15.8		.19		12.03
Leg, including ankle				6	6	6	22.2		10.0	10.0		.14		14.43
Foot and toe				2	2	2	7.4		3.0	3.0		.01		4.81
Multiple				2	2	2	7.4		6.5	6.5		.03		4.81
Not stated														
Total				27	27	27			14.4	14.4		.94		64.94
Not stated:														
Head	6			54	54	60	10.7		17.3	615.6	5.05	.13	.84	7.58
Eye				44	44	44	7.9		9.9	9.9		.06		6.18
Trunk	5			151	151	156	27.9		21.0	212.6	4.21	.44	.70	21.20
Hernia				6	6	6	1.1		81.5	81.5		.07		.84
Arm, including wrist				33	33	33	5.9		18.8	18.8		.09		4.63
Hand and finger			2	93	95	95	17.0	431.5	16.1	24.8		.33		13.34
Leg, including ankle				66	66	66	11.8		26.1	26.1		.24		9.27
Foot and toe				48	48	48	8.6		24.0	24.0		.16		6.74
Multiple	4			48	48	52	9.3		40.6	499.0	3.37	.27	.56	6.74
Not stated				78	78	78			27.9	27.9		.31		10.95
Total	15		2	621	623	638		431.5	22.8	164.6	12.64	2.11	2.11	87.48
Surface[6]	1		5	147	152	153		315.0	20.4	69.1	1.08	.83	.18	27.44
Grand total	64	2	43	3,790	3,835	3,899		561.9	25.7	132.8	6.40	2.23	1.07	63.88

1 All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages. Number of injuries for which part of body injured was not stated are excluded in calculating percentages. For all hand-loading injuries, 100 percent represents a total of 371 injuries; for 1 to 19 percent mechanical-loading injuries, 100 percent represents a total of 655 injuries; for 20 to 39 percent mechanical-loading injuries, 100 percent represents a total of 651 injuries; for 40 to 59 percent mechanical-loading injuries, 100 percent represents a total of 630 injuries; for 60 to 79 percent mechanical-loading injuries, 100 percent represents a total of 93 injuries; for 80 to 99 percent mechanical-loading injuries, 100 percent represents a total of 662 injuries; for 100 percent mechanical-loading injuries, 100 percent represents a total of 27 injuries; and for the group not stating the percent of mechanization 100 percent represents a total of 560 injuries.

2 A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.

3 Number of days charged per thousand man-hours.

4 Number of injuries per million man-hours.

5 Less than 0.005.

6 Data on 93 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 31.—*Number of injuries, average severity, and injury rates at Pennsylvania anthracite mines (underground and surface works), by percentage groups of coal loaded mechanically and part of body injured, 1954*

Coal loaded mechanically, by percentage groups and part of body injured	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3] per thousand man-hours		Frequency rates[4] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
All hand loading:														
Head	2			21	21	23	9.5		21.7	541.5	2.81	0.11	0.47	4.92
Eye				12	12	12	4.9		5.2	5.2		.01		2.81
Trunk	7			63	63	70	28.8		29.9	626.9	9.84	.44	1.64	14.76
Hernia				7	7	7	2.9		54.9	54.9		.09		1.64
Arm, including wrist				14	14	14	5.8		44.0	44.0		.14		3.28
Hand and finger			5	34	39	39	16.0	292.6	45.6	77.3		.71		9.13
Leg, including ankle				35	35	35	14.4		54.3	54.3		.44		8.20
Foot and toe				22	22	22	9.1		22.8	22.8		.12		5.15
Multiple	1			20	20	21	8.6		68.1	350.6	1.41	.32	.23	4.65
Not stated														
Total	10		5	228	233	243		292.6	38.2	288.8	14.05	2.38	2.34	54.57
1 to 19 percent:														
Head	1			14	14	15	5.0		7.7	407.2	1.60	.03	.27	3.73
Eye				25	25	25	8.4		6.6	6.6		.04		6.66
Trunk	3			80	80	83	27.9		34.5	250.1	4.80	.74	.80	21.31
Hernia				7	7	7	2.3		79.1	79.1		.15		1.86
Arm, including wrist				9	9	9	3.0		24.1	24.1		.06		2.40
Hand and finger			2	46	48	48	16.1	450.0	17.2	35.2		.45		12.79
Leg, including ankle			1	47	48	48	16.1	3,000.0	24.6	86.6		1.11		12.79
Foot and toe				41	41	41	13.8		21.2	21.2		.23		10.92
Multiple				22	22	22	7.4		39.9	39.9		.23		5.86
Not stated														
Total	4		3	291	294	298			25.8	118.8	6.39	3.04	1.07	78.33
20 to 39 percent:														
Head				4	4	4	10.8		9.0	9.0		.07		7.91
Eye				4	4	4	10.8		3.5	3.5		.03		7.91
Trunk				9	9	9	24.3		16.1	16.1		.29		17.81
Hernia														
Arm, including wrist				1	1	1	2.7		6.0	6.0		.01		1.98
Hand and finger				10	10	10	27.0		17.8	17.8		.35		19.79
Leg, including ankle				3	3	3	8.1		9.0	9.0		.05		5.94
Foot and toe				3	3	3	8.1		26.0	26.0		.15		5.94
Multiple				3	3	3	8.1		7.0	7.0		.04		5.94
Not stated														
Total				37	37	37			13.6	13.6		1.00		73.21
40 to 59 percent:														
Head	3			12	12	15	6.1		15.1	1,212.1	5.91	.06	.98	3.94
Eye				34	34	34	13.9		4.8	4.8		.05		11.35
Trunk	1			55	55	56	22.9		21.9	128.7	1.97	.40	.33	15.04
Hernia				1	1	1	.4		83.0	83.0		.03		.33
Arm, including wrist				15	15	15	6.1		29.9	29.9		.15		4.92
Hand and finger			4	42	46	46	18.8	337.5	25.1	52.3		.79		15.09
Leg, including ankle				39	39	39	15.9		24.9	24.9		.32		12.80
Foot and toe			1	22	23	23	9.4	75.0	21.3	23.6		.18		7.55
Multiple	2			14	14	16	6.5		13.7	762.0	3.94	.06	.66	4.59
Not stated														
Total	6		5	234	239	245		285.0	20.4	172.2	11.81	2.03	1.97	78.41
60 to 79 percent:														
Head				6	6	6	4.0		13.8	13.8		.05		3.85
Eye				7	7	7	4.6		9.0	9.0		.04		4.49
Trunk				34	34	34	22.5		34.0	34.0		.74		21.81
Hernia														
Arm, including wrist				6	6	6	4.0		33.7	33.7		.13		3.85
Hand and finger				47	47	47	31.1		44.6	44.6		1.34		30.15
Leg, including ankle				27	27	27	17.9		71.3	71.3		1.23		17.32
Foot and toe				11	11	11	7.3		60.1	60.1		.42		7.06
Multiple				13	13	13	8.6		51.0	51.0		.43		8.34
Not stated														
Total				151	151	151			45.4	45.4		4.39		96.87

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TABLE 31.—*Number of injuries, average severity, and injury rates at Pennsylvania anthracite mines (underground and surface works), by percentage groups of coal loaded mechanically and part of body injured, 1954*—Continued

Coal loaded mechanically, by percentage groups and part of body injured	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3] per thousand man-hours		Frequency rates[4] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
80 to 99 percent:														
Head	4			30	30	34	7.3		17.3	721.1	3.05	0.07	0.51	3.82
Eye				56	56	56	12.0		5.2	5.2		.04		7.13
Trunk				90	90	90	19.3		21.5	21.5		.25		11.45
Hernia				2	2	2	.4		52.5	52.5		.01		.25
Arm, including wrist				24	24	24	5.2		27.5	27.5		.08		3.05
Hand and finger			6	106	112	112	24.0	491.7	23.6	48.7		.69		14.25
Leg, including ankle			3	80	83	83	17.8	4,000.0	42.9	185.9		1.96		10.56
Foot and toe			1	45	46	46	9.9	600.0	26.7	39.2		.23		5.85
Multiple	1			18	18	19	4.1		37.8	351.6	.76	.09	.13	2.29
Not stated	1					1				6,000.0	.76		.13	
Total	6		10	451	461	467		1,555.0	25.1	134.6	4.58	3.42	.76	58.66
100 percent:														
Head	1			4	4	5	8.8		11.3	1,209.0	6.69	.05	1.11	4.46
Eye				9	9	9	15.8		4.9	4.9		.05		10.03
Trunk	3			9	9	12	21.1		46.3	1,534.8	20.06	.46	3.34	10.03
Hernia														
Arm, including wrist				2	2	2	3.5		42.5	42.5		.09		2.23
Hand and finger			2	8	10	10	17.5	300.0	16.0	72.8		.81		11.15
Leg, including ankle				8	8	8	14.0		7.6	7.6		.07		8.92
Foot and toe			1	9	10	10	17.5	2,400.0	38.6	274.7		3.06		11.15
Multiple				1	1	1	1.8		32.0	32.0		.04		1.11
Not stated														
Total	4		3	50	53	57		1,000.0	23.2	494.0	26.75	4.64	4.46	59.07
Not stated:														
Head	11			106	106	117	9.6		11.9	573.7	3.91	.07	.65	6.28
Eye			3	139	142	142	11.7	1,800.0	5.0	42.9		.36		8.42
Trunk	5			194	194	199	16.4		25.3	175.4	1.78	.29	.30	11.50
Hernia				13	13	13	1.1		99.7	99.7		.08		.77
Arm, includin gwrist			1	37	38	38	3.1	3,600.0	33.7	127.5		.29		2.25
Hand and finger			26	241	267	267	22.0	380.8	18.9	54.2		.86		15.83
Leg, including ankle	1		1	171	172	173	14.3	3,600.0	42.7	97.7	.36	.65	.06	10.20
Foot and toe				147	147	147	12.1		19.9	19.9		.17		8.71
Multiple	7			111	111	118	9.7		36.2	389.9	2.49	.24	.41	6.58
Not stated														
Total	24		31	1,159	1,190	1,214		725.8	24.3	160.4	8.54	3.01	1.42	70.54
Surface[5]	2		7	131	138	140		964.3	26.6	158.8	2.57	2.19	.43	29.54
Grand total	56		64	2,732	2,796	2,852		852.9	26.5	162.4	7.74	2.93	1.29	64.38

1 All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages. Number of injuries for which part of body injured was not stated are excluded in calculating percentages. For all hand-loading injuries, 100 percent represents a total of 243 injuries; for 1 to 19 percent mechanical-loading injuries, 100 percent represents a total of 298 injuries; for 20 to 39 percent mechanical-loading injuries, 100 percent represents a total of 37 injuries; for 40 to 59 percent mechanical-loading injuries, 100 percent represents a total of 245 injuries; for 60 to 79 percent mechanical-loading injuries, 100 percent represents a total of 151 injuries; for 80 to 99 percent mechanical-loading injuries, 100 percent represents a total of 466 injuries; for 100 percent mechanical-loading injuries, 100 percent represents a total of 57 injuries; and for the group not stating the percent of mechanization, 100 percent represents a total of 1,214 injuries.

2 A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.

3 Number of days charged per thousand man-hours.

4 Number of injuries per million man-hours.

5 Data on 80 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 32.—*Closed cases[1] of temporary total injuries for which company reported days of disability at bituminous-coal mines in the United States, by days of disability per injury and general location, 1953*

Days of disability per injury	Number of temporary total injuries				
	Underground mines			Strip mines	Total
	Underground	Surface	Total		
1	628	101	729	81	810
2	467	76	543	53	596
3	588	92	680	62	742
4	690	89	779	57	836
5	772	85	857	51	908
6	708	85	793	37	830
7	399	48	447	29	476
8	222	22	244	18	262
9	362	43	405	31	436
10	402	48	450	25	475
11	415	53	468	31	499
12	390	41	431	18	449
13	429	40	469	17	486
14	256	26	282	15	297
15	140	15	155	6	161
16	203	32	235	15	250
17	238	22	260	12	272
18	226	18	244	12	256
19	221	25	246	11	257
20	215	21	236	3	239
21	161	15	176	6	182
22	96	12	108	5	113
23	144	21	165	3	168
24	170	20	190	13	203
25	173	17	190	10	200
26	184	17	201	10	211
27	178	30	208	9	217
28	100	7	107	4	111
29	76	7	83	3	86
30	146	14	160	7	167
31	130	13	143	5	148
32	147	10	157	5	162
33	148	9	157	8	165
34	122	8	130	9	139
35	72	13	85	1	86
36	44	1	45	4	49
37	74	6	80	4	84
38	98	15	113	3	116
39	93	9	102	5	107
40	106	5	111	1	112
41	124	12	136	7	143
42	65	5	70	3	73
43	31	4	35	2	37
44	68	4	72	2	74
45	93	10	103	2	105
46 to 60	878	96	974	43	1,017
61 to 90	928	97	1,025	39	1,064
91 to 120	397	39	436	24	460
121 to 150	252	26	278	6	284
151 or more	681	44	725	16	741
Total	13,950	1,568	15,518	843	16,361

[1] In addition to the temporary total injuries for which companies reported days of disability there were 3,185 temporary total injuries for which days of disability were not reported. To obtain total severity data for the industry, these "open cases" were closed by assigning days of disability by classification.

TABLE 33.—*Closed cases[1] of temporary total injuries for which company reported days of disability at bituminous-coal mines in the United States, by days of disability per injury and general location, 1954*

Days of disability per injury	Number of temporary total injuries				
	Underground mines			Strip mines	Total
	Underground	Surface	Total		
1	450	63	513	52	565
2	328	57	385	59	444
3	430	63	493	54	547
4	501	74	575	50	625
5	503	76	579	54	633
6	469	69	538	48	586
7	234	30	264	31	295
8	137	13	150	23	173
9	238	28	266	19	285
10	288	43	331	16	347
11	252	26	278	15	293
12	262	24	286	19	305
13	289	29	318	16	334
14	172	20	192	14	206
15	92	9	101	9	110
16	147	18	165	14	179
17	174	30	204	10	214
18	162	12	174	9	183
19	151	24	175	8	183
20	144	25	169	4	173
21	111	14	125	3	128
22	52	8	60	2	62
23	97	11	108	8	116
24	100	16	116	3	119
25	129	8	137	4	141
26	84	15	99	8	107
27	126	14	140	8	148
28	62	3	65	5	70
29	49	5	54	5	59
30	82	7	89	3	92
31	93	10	103	5	108
32	84	9	93	4	97
33	94	14	108	7	115
34	83	11	94	5	99
35	41	4	45	3	48
36	29	4	33	5	38
37	51	5	56	3	59
38	69	7	76	3	79
39	71	10	81	4	85
40	68	7	75	5	80
41	71	7	78	1	79
42	43	5	48	2	50
43	32	6	38	3	41
44	41	7	48	3	51
45	58	10	68	1	69
46 to 60	598	69	667	37	704
61 to 90	645	73	718	32	750
91 to 120	282	32	314	24	338
121 to 150	187	18	205	7	212
151 or more	470	32	502	14	516
Total	9,425	1,174	10,599	741	11,340

[1] In addition to the temporary total injuries for which companies reported days of disability, there were 2,983 temporary total injuries for which days of disability were not reported. To obtain total severity data for the industry, these "open cases" were closed by assigning average days of disability by classification.

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TABLE 34.—*Closed cases[1] of temporary total injuries for which company reported days of disability at Pennsylvania anthracite mines, by days of disability per injury and general location, 1953*

Days of disability per injury	Number of temporary total injuries				
	Underground mines			Strip mines	Total
	Underground	Surface	Total		
1	205	36	241	21	262
2	160	34	194	14	208
3	238	42	280	24	304
4	295	27	322	18	340
5	223	26	249	23	272
6	209	19	228	14	242
7	85	10	95	9	104
8	37	4	41	9	50
9	66	17	83	3	86
10	85	16	101	5	106
11	103	19	122	4	126
12	90	11	101	7	108
13	73	11	84	5	89
14	51	6	57	2	59
15	14	2	16	1	17
16	32	3	35	5	40
17	49	1	50	6	56
18	52	4	56	1	57
19	41	5	46	2	48
20	42	9	51		51
21	25	4	29	1	30
22	8	3	11	1	12
23	26	3	29	2	31
24	35	7	42	1	43
25	24	5	29		29
26	29	5	34	2	36
27	24	3	27	3	30
28	14	2	16	2	18
29	5	4	9	1	10
30	27	4	31	1	32
31	27	1	28	2	30
32	21	3	24		24
33	23	1	24	2	26
34	21	3	24		24
35	9	3	12	1	13
36	1	1	2		2
37	9	2	11	1	12
38	14	1	15		15
39	14	1	15	3	18
40	18	4	22	1	23
41	13	1	14	3	17
42	3	4	7	2	9
43	3	2	5	1	6
44	7	3	10	1	11
45	8	1	9		9
46 to 60	156	21	177	11	188
61 to 90	157	26	183	9	192
91 to 120	79	13	92	6	98
121 to 150	39	6	45	2	47
151 or more	68	9	77	5	82
Total	3,057	448	3,505	237	3,742

[1] In addition to the temporary total injuries for which companies reported days of disability there were 352 temporary total injuries for which days of disability were not reported. To obtain total severity data for the industry, these "open cases" were closed by assigning average days of disability by classification.

TABLE 35.—*Closed cases[1] of temporary total injuries for which company reported days of disability at Pennsylvania anthracite mines, by days of disability per injury and general location, 1954*

Days of disability per injury	Number of temporary total injuries				
	Underground mines			Strip mines	Total
	Underground	Surface	Total		
1	102	32	134	10	144
2	141	21	162	8	170
3	180	21	201	11	212
4	213	25	238	3	241
5	164	22	186	10	196
6	142	22	164	11	175
7	63	10	73	2	75
8	23	5	28	3	31
9	67	7	74	5	79
10	62	10	72	4	76
11	61	5	66	5	71
12	62	8	70	1	71
13	67	11	78	1	79
14	23	4	27	2	29
15	19	3	22	1	23
16	31	3	34	1	35
17	37	5	42	3	45
18	35	2	37	2	39
19	38	5	43	2	45
20	38	5	43	3	46
21	15	5	20	2	22
22	12	2	14	1	15
23	20	2	22	3	25
24	24	4	28	1	29
25	27	2	29	1	30
26	16	2	18		18
27	19	2	21	1	22
28	13	3	16		16
29	5	1	6	3	9
30	18	4	22	1	23
31	11	3	14		14
32	15	1	16	1	17
33	22		22	1	23
34	25		25		25
35	7		7	1	8
36	3		3		3
37	10	1	11	2	13
38	16	3	19		19
39	7	1	8		8
40	11	1	12	1	13
41	11	3	14	2	16
42	6		6		6
43	1		1		1
44	5	1	6	2	8
45	4	1	5		5
46 to 60	106	10	116	5	121
61 to 90	116	14	130	4	134
91 to 120	43	10	53	2	55
121 to 150	37	2	39	1	40
151 or more	58	8	66	6	72
Total	2,251	312	2,563	129	2,692

[1] In addition to the temporary total injuries for which companies reported days of disability, there were 213 temporary total injuries for which days of disability were not reported. To obtain total severity data for the industry, these "open cases" were closed by assigning average days of disability by classification.

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TABLE 36.—*Employment and production data on bituminous-coal mines (underground and surface works) in the United States, by percentage of coal loaded mechanically, 1953*

Coal loaded mechanically, percent	Number of mines	Men at work	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour
All hand loading	1,695	39,609	6,935,160	54,713,937	38,804,495	0.71
1 to 19	28	4,299	848,806	6,707,017	4,246,115	.63
20 to 39	47	8,409	1,666,905	13,140,702	8,560,226	.65
40 to 59	72	8,198	1,484,301	11,515,830	7,470,605	.65
60 to 79	61	7,046	1,341,176	10,607,939	6,439,311	.61
80 to 99	110	15,755	3,167,783	25,143,701	17,819,251	.71
100	923	136,877	27,849,238	220,052,897	228,203,276	1.04
Not stated	3,847	42,320	6,385,413	50,545,922	37,750,722	.75
Surface [1]	----------	3,396	754,558	5,638,992	----------	----------
Total	6,783	265,909	50,433,340	398,066,937	349,294,001	.88

[1] Data on 49 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 37.—*Employment and production data on bituminous-coal mines (underground and surface works) in the United States, by percentage of coal loaded mechanically, 1954*

Coal loaded mechanically, percent	Number of mines	Men at work	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour
All hand loading	1,345	20,585	3,188,091	25,097,350	17,622,426	0.70
1 to 19	32	2,831	496,443	3,932,057	2,612,432	.66
20 to 39	41	3,543	544,456	4,275,393	3,286,980	.77
40 to 59	35	3,476	577,679	4,559,326	3,439,588	.75
60 to 79	41	5,217	910,881	7,224,489	5,383,384	.75
80 to 99	89	11,171	2,014,522	15,958,710	11,910,819	.75
100	962	121,327	22,798,243	179,913,368	206,879,085	1.15
Not stated	3,725	45,417	6,504,706	51,754,734	39,386,606	.76
Surface [1]	----------	2,862	643,293	4,810,759	----------	----------
Total	6,270	216,429	37,678,314	297,526,186	290,521,320	.98

[1] Data on 51 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 38.—*Employment and production data on Pennsylvania anthracite mines (underground and surface works) by percentage of coal loaded mechanically, 1953*

Coal loaded mechanically, percent	Number of mines	Men at work	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour
All hand loading	60	5,806	964,067	6,751,091	2,427,198	0.36
1 to 19	23	8,844	1,347,624	10,053,839	3,180,430	.32
20 to 39	17	7,709	1,292,998	9,661,699	2,597,681	.27
40 to 59	25	6,668	1,097,808	8,078,599	2,410,422	.30
60 to 79	17	1,270	259,937	1,861,928	640,805	.34
80 to 99	69	8,628	1,344,256	10,551,979	3,364,034	.32
100	14	303	57,291	415,739	167,714	.40
Not stated	118	5,704	983,788	7,121,712	3,245,139	.46
Surface[1]	----------	4,191	754,058	5,538,507	----------	----------
Total	343	49,123	8,101,827	60,035,093	18,033,423	.30

[1] Data on 93 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 39.—*Employment and production data on Pennsylvania anthracite mines (underground and surface works) by percentage of coal loaded mechanically, 1954*

Coal loaded mechanically, percent	Number of mines	Men at work	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour
All hand loading	67	3,294	575,025	4,269,636	2,000,755	0.47
1 to 19	9	2,959	529,803	3,753,373	1,734,846	.46
20 to 39	8	380	70,321	505,409	434,083	.86
40 to 59	11	2,262	416,428	3,048,060	1,038,009	.34
60 to 79	11	1,041	203,675	1,558,806	636,910	.41
80 to 99	43	5,994	1,025,972	7,858,649	2,822,255	.36
100	40	766	127,317	897,252	463,066	.52
Not stated	100	15,865	2,295,698	16,869,848	6,366,637	.38
Surface[1]	----------	3,638	637,789	4,670,969	----------	----------
Total	289	36,199	5,882,028	43,432,002	15,496,561	.36

[1] Data on 80 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 40.—*Injury experience at bituminous-coal mines (underground and surface works) in the United States, by percentage of coal loaded mechanically, 1953*[1]

Coal loaded mechanically, percent	Number of injuries						Distribution of all injuries, percent[2]	Average severity[3]			Time-loss rates[4] per thousand man-hours		Frequency rates[5] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
All hand loading	59	4	80	2,905	2,989	3,048	18.7	646.4	35.7	175.0	6.47	3.28	1.08	54.63
1 to 19	5	-------	10	377	387	392	2.4	930.0	36.3	135.2	4.47	3.43	.75	57.70
20 to 39	17	-------	21	878	899	916	5.6	759.7	35.6	162.9	7.76	3.59	1.29	68.41
40 to 59	9	1	24	583	608	617	3.8	367.2	38.9	148.3	4.69	3.26	.78	52.80
60 to 79	9	-------	9	382	391	400	2.5	825.0	41.5	193.2	5.09	2.19	.85	36.86
80 to 99	26	3	42	1,171	1,216	1,242	7.6	405.4	39.4	190.9	6.20	3.23	1.03	48.36
100	182	8	287	9,209	9,504	9,686	59.4	784.5	36.2	175.3	4.96	2.76	.83	43.19
Not stated	63	2	39	2,671	2,712	2,775	-------	632.7	36.2	184.3	7.48	2.64	1.25	53.65
Surface[6]	6	-------	1	80	81	87	-------	750.0	22.9	443.4	6.38	.46	1.06	14.36
Total	376	18	513	18,256	18,787	19,163	-------	703.3	36.4	176.9	5.67	2.85	.94	47.20

[1] Data include all injuries (underground and surface) at underground bituminous-coal mines.
[2] All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages. Number of injuries for which percent of mechanical loading was not stated are excluded in calculating percentages; 100 percent represents a total of 16,301 injuries.
[3] A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.
[4] Number of days charged per thousand man-hours.
[5] Number of injuries per million man-hours.
[6] Data on 49 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 41.—*Injury experience at bituminous-coal mines (underground and surface works) in the United States, by percentage of coal loaded mechanically, 1954*[1]

Coal loaded mechanically, percent	Number of injuries						Distribution of all injuries, percent[2]	Average severity[3]			Time-loss rates[4] per thousand man-hours		Frequency rates[5] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
All hand loading	40	3	26	1,068	1,097	1,137	10.1	887.0	36.8	281.8	9.56	3.20	1.59	43.71
1 to 19	4	-------	12	230	242	246	2.2	368.8	24.3	138.2	6.10	2.54	1.02	61.55
20 to 39	7	-------	2	314	316	323	2.9	225.0	37.3	167.7	9.82	2.84	1.64	73.91
40 to 59	5	-------	5	231	236	241	2.1	180.0	31.1	158.0	6.58	1.77	1.10	51.76
60 to 79	4	-------	7	312	319	323	2.9	632.1	39.9	126.6	3.32	2.34	.55	44.16
80 to 99	19	-------	17	712	729	748	6.6	535.3	39.6	202.2	7.14	2.34	1.19	45.68
100	192	8	279	7,812	8,099	8,291	73.3	693.5	35.5	201.5	6.40	2.88	1.07	45.02
Not stated	46	1	42	2,398	2,441	2,487	-------	631.1	38.6	161.3	5.33	2.42	.89	47.16
Surface[6]	1	-------	2	83	85	86	-------	450.0	30.5	109.6	1.25	.71	.21	17.67
Total	318	12	392	13,160	13,564	13,882	-------	671.5	36.3	196.0	6.41	2.73	1.07	45.59

[1] Data include all injuries (underground and surface) at underground bituminous-coal mines.
[2] All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages. Number of injuries for which percent of mechanical loading was not stated are excluded in calculating percentages; 100 percent represents a total of 11,309 injuries.
[3] A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.
[4] Number of days charged per thousand man-hours.
[5] Number of injuries per million man-hours.
[6] Data on 51 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 42.—*Injury experience at Pennsylvania anthracite mines (underground and surface works) by percentage of coal loaded mechanically, 1953*[1]

Coal loaded mechanically, percent	Number of injuries						Distribution of all injuries, percent[2]	Average severity[3]			Time-loss rates[4] per thousand man-hours		Frequency rates[5] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
All hand loading	11		5	358	363	374	12.03	1,110.0	30.0	220.1	9.78	2.42	1.63	53.77
1 to 19	3		9	643	652	655	21.07	158.3	29.8	58.9	1.79	2.05	.30	64.85
20 to 39	10	1	5	636	642	652	20.98	360.0	24.9	128.2	6.21	2.44	1.04	66.45
40 to 59	13		7	610	617	630	20.27	760.7	23.2	154.7	9.66	2.41	1.61	76.37
60 to 79	2		1	104	105	107	3.44	300.0	41.5	155.3	6.44	2.48	1.07	56.39
80 to 99	9	1	9	644	654	663	21.33	813.9	24.5	125.3	5.12	2.76	.85	61.98
100				27	27	27	.87		14.4	14.4		.94		64.94
Not stated	15		2	621	623	638		431.5	22.8	164.6	12.64	2.11	2.11	87.48
Surface[6]	1		5	147	152	153		315.0	20.4	69.1	1.08	.83	.18	27.44
Total	64	2	43	3,790	3,835	3,899		561.9	25.7	132.8	6.40	2.23	1.07	63.88

[1] Data include all injuries (underground and surface) at underground anthracite mines.
[2] All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages. Number of injuries for which percent of mechanical loading was not stated are excluded in calculating percentages; 100 percent represents a total of 3,108 injuries.
[3] A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.
[4] Number of days charged per thousand man-hours.
[5] Number of injuries per million man-hours.
[6] Data on 93 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 43.—*Injury experience at Pennsylvania anthracite mines (underground and surface works) by percentage of coal loaded mechanically, 1954*[1]

Coal loaded mechanically, percent	Number of injuries						Distribution of all injuries, percent[2]	Average severity[3]			Time-loss rates[4] per thousand man-hours		Frequency rates[5] per million man-hours	
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Fatal	Nonfatal	Fatal	Nonfatal
		Permanent		Temporary total	Total nonfatal									
		Total	Partial											
All hand loading	10		5	228	233	243	16.2	292.6	38.2	288.8	14.05	2.38	2.34	54.57
1 to 19	4		3	291	294	298	19.9	1,300.0	25.8	118.8	6.39	3.04	1.07	78.33
20 to 39				37	37	37	2.5		13.6	13.6		1.00		73.21
40 to 59	6		5	234	239	245	16.4	285.0	20.4	172.2	11.81	2.03	1.97	78.41
60 to 79				151	151	151	10.1		45.4	45.4		4.39		96.87
80 to 99	6		10	451	461	467	31.2	1,555.0	25.1	134.6	4.58	3.42	.76	58.66
100	4		3	50	53	57	3.8	1,000.0	23.2	494.0	26.75	4.64	4.46	59.07
Not stated	24		31	1,159	1,190	1,214		725.8	24.3	160.4	8.54	3.01	1.42	70.54
Surface[6]	2		7	131	138	140		964.3	26.6	158.8	2.57	2.19	.43	29.54
Total	56		64	2,732	2,796	2,852		852.9	26.5	162.4	7.74	2.93	1.29	64.38

[1] Data include all injuries (underground and surface) at underground anthracite mines.
[2] All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages. Number of injuries for which percent of mechanical loading was not stated are excluded in calculating percentages; 100 percent represents a total of 1,498 injuries.
[3] A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.
[4] Number of days charged per thousand man-hours.
[5] Number of injuries per million man-hours.
[6] Data on 80 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 44.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by number of men employed, 1953*

Number of men employed	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
1 to 4	24	248	4.17	43.12	6.73	69.54	6,532	112	730,834	5,750,862	3,566,464	0.62	2,361
5 to 9	18	572	1.49	47.26	2.23	70.95	11,869	128	1,524,807	12,102,865	8,061,889	.67	1,838
10 to 14	17	487	1.87	53.71	2.73	78.20	7,588	151	1,143,949	9,067,852	6,227,979	.69	654
15 to 19	11	412	1.54	57.79	2.10	78.84	5,527	163	901,142	7,129,596	5,226,044	.73	325
20 to 24	8	310	1.71	66.14	2.24	86.82	3,745	159	595,861	4,687,113	3,570,614	.76	174
25 to 49	12	1,271	.58	60.92	.72	76.10	15,663	168	2,637,058	20,862,129	16,702,243	.80	457
50 to 74	15	894	.98	58.55	1.06	63.05	11,732	165	1,932,954	15,270,244	14,180,193	.93	194
75 to 99	13	799	.96	59.02	1.02	62.56	10,057	171	1,717,854	13,538,630	12,772,122	.94	117
100 to 124	15	1,003	.96	64.15	.98	65.69	10,770	184	1,978,001	15,634,128	15,269,556	.98	97
125 to 149	12	940	.76	59.56	.78	60.99	12,161	164	2,000,050	15,781,454	15,412,522	.98	90
150 to 174	10	864	.67	58.10	.75	64.99	9,884	190	1,878,058	14,870,330	13,294,050	.89	61
175 to 199	13	908	.93	64.62	1.03	71.84	8,935	199	1,778,675	14,051,672	12,638,435	.90	48
200 to 249	31	1,818	1.02	60.09	1.16	67.79	19,331	198	3,830,064	30,252,316	26,819,683	.89	87
250 to 299	25	1,359	.91	49.53	.97	52.73	17,170	202	3,474,332	27,436,944	25,771,637	.94	63
300 to 399	42	2,159	.97	49.75	1.00	51.34	28,387	194	5,503,966	43,396,167	42,049,544	.97	81
400 to 499	37	1,850	.86	42.94	.94	47.06	26,859	203	5,452,367	43,086,733	39,314,255	.91	60
500 to 599	24	1,007	.88	36.89	.88	37.04	15,807	218	3,442,478	27,300,532	27,184,616	1.00	29
600 or over	43	1,809	.60	25.05	.70	29.54	40,496	226	9,156,332	72,208,378	61,232,155	.85	47
Surface[1]	6	77	1.06	13.65	------	------	3,396	222	754,558	5,638,992	------	------	------
Total	376	18,787	.94	47.20	1.08	53.79	265,909	190	50,433,340	398,066,937	349,294,001	.88	6,783

[1] Data on 49 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 45.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by number of men employed, 1954*

Number of men employed	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
1 to 4	29	223	5.57	42.83	8.90	68.41	5,824	113	660,670	5,206,131	3,259,805	0.63	2,097
5 to 9	18	611	1.44	48.91	2.04	69.23	11,733	134	1,573,401	12,491,415	8,825,236	.71	1,798
10 to 14	12	473	1.33	52.46	1.85	72.89	7,947	143	1,138,593	9,015,639	6,488,812	.72	682
15 to 19	7	294	1.14	47.94	1.56	65.65	5,372	145	776,300	6,132,810	4,477,968	.73	325
20 to 24	4	279	.79	55.35	.98	68.63	3,871	164	636,392	5,040,435	4,064,982	.81	179
25 to 49	16	876	.99	54.19	1.16	63.58	13,028	157	2,038,947	16,164,587	13,776,968	.85	376
50 to 74	15	866	1.12	64.86	1.04	60.00	10,439	162	1,693,999	13,351,381	14,433,928	1.08	172
75 to 99	15	662	1.41	62.07	1.36	59.85	9,182	148	1,355,315	10,665,688	11,061,005	1.04	106
100 to 124	12	841	.86	59.93	.76	53.13	10,270	173	1,775,742	14,033,237	15,830,052	1.13	93
125 to 149	15	727	1.21	58.53	1.12	54.21	9,464	166	1,573,315	12,421,547	13,411,011	1.08	69
150 to 174	20	597	1.75	52.18	1.56	46.71	8,137	177	1,444,058	11,440,157	12,780,762	1.12	50
175 to 199	6	577	.53	51.15	.52	50.32	8,694	164	1,428,604	11,281,170	11,467,290	1.02	46
200 to 249	24	1,293	1.20	64.47	1.19	64.36	14,011	181	2,538,914	20,057,191	20,090,513	1.00	63
250 to 299	22	1,122	1.08	55.33	.99	50.36	14,384	179	2,577,867	20,278,037	22,278,830	1.10	53
300 to 399	30	1,459	.83	40.60	.73	35.69	23,660	193	4,567,849	35,934,327	40,884,648	1.14	69
400 to 499	31	937	1.29	38.97	1.25	37.81	15,495	196	3,037,163	24,043,300	24,782,110	1.03	35
500 to 599	16	476	.89	26.60	.94	28.01	11,427	197	2,253,091	17,893,874	16,995,905	.95	21
600 or over	25	1,166	.53	24.67	.55	25.56	30,629	195	5,964,801	47,264,501	45,611,495	.97	36
Surface[1]	1	85	.21	17.67	------	------	2,862	225	643,293	4,810,759	------	------	------
Total	318	13,564	1.07	45.59	1.09	46.69	216,429	174	37,678,314	297,526,186	290,521,320	.98	6,270

[1] Data on 51 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 46.—*Injury experience, employment, and production data on bituminous-coal strip mines in the United States, by number of men employed, 1953*

Number of men employed	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
			Per million man-hours		Per million tons								
	Fatal	Non-fatal	Fatal	Non-fatal	Fatal	Non-fatal							
1 to 4	1	57	0.60	34.03	0.33	18.88	1,530	135	206,723	1,674,918	3,018,807	1.80	589
5 to 9	4	121	1.01	30.53	.53	16.04	3,167	154	487,781	3,963,206	7,545,234	1.90	478
10 to 14	2	103	.59	30.49	.31	15.96	2,545	164	416,332	3,378,219	6,452,137	1.91	219
15 to 19	2	111	.57	31.82	.27	15.01	2,538	170	432,436	3,488,093	7,395,250	2.12	152
20 to 24	1	69	.35	24.46	.17	11.50	1,767	196	346,985	2,820,773	5,998,847	2.13	81
25 to 49	8	335	.69	28.83	.34	14.36	6,785	213	1,447,519	11,621,194	23,326,180	2.01	193
50 to 74		130		24.72		10.33	3,011	222	667,626	5,259,939	12,580,699	2.39	50
75 to 99		119		28.47		9.46	2,531	217	550,221	4,179,644	12,581,981	3.01	29
100 to 124		54		20.18		6.98	1,476	240	354,131	2,675,915	7,737,975	2.89	13
125 to 149	2	86	.85	36.75	.33	14.19	1,509	205	309,880	2,339,906	6,059,436	2.59	11
150 to 174		12		43.31		15.19	159	240	38,216	277,067	790,191	2.85	1
175 to 199	1	26	.96	24.86	.35	9.09	555	247	137,352	1,045,967	2,860,592	2.73	3
200 to 249		66		35.85		11.82	1,097	221	242,028	1,840,776	5,583,087	3.03	5
250 to 299		31		30.63		13.89	533	243	129,350	1,012,080	2,232,270	2.21	2
300 to 399		5		7.42		2.06	313	301	94,254	674,205	2,428,774	3.60	1
Total	21	1,325	.45	28.65	.20	12.43	29,516	199	5,860,834	46,251,902	106,591,460	2.30	1,827

TABLE 47.—*Injury experience, employment, and production data on bituminous-coal strip mines in the United States, by number of men employed, 1954*

Number of men employed	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
			Per million man-hours		Per million tons								
	Fatal	Non-fatal	Fatal	Non-fatal	Fatal	Non-fatal							
1 to 4	1	93	0.58	54.34	0.34	31.30	1,615	132	213,141	1,711,341	2,971,595	1.74	613
5 to 9	1	122	.31	37.36	.16	19.61	2,471	164	405,263	3,265,794	6,222,377	1.91	375
10 to 14	2	99	.57	28.09	.25	12.44	2,337	183	427,143	3,524,314	7,958,624	2.26	199
15 to 19		90		27.10		13.80	2,078	198	411,311	3,321,249	6,520,051	1.96	124
20 to 24	2	71	.86	30.68	.41	14.41	1,612	176	283,550	2,313,929	4,928,182	2.13	73
25 to 49	7	294	.67	28.15	.31	13.14	6,399	203	1,299,599	10,442,789	22,366,616	2.14	184
50 to 74		111		31.93		10.76	2,100	214	449,511	3,476,102	10,318,070	2.97	35
75 to 99		132		26.18		7.70	2,784	236	657,593	5,042,276	17,140,908	3.40	33
100 to 124	2	66	.83	27.49	.26	8.51	1,467	216	317,593	2,400,609	7,759,607	3.23	13
125 to 149		28		23.84		7.89	647	239	154,858	1,174,296	3,547,887	3.02	5
150 to 174		22		19.28		5.92	645	232	149,714	1,141,136	3,715,465	3.26	4
175 to 199		9		34.41		10.78	198	182	36,020	261,527	834,905	3.19	1
200 to 249	1	42	.62	26.17	.19	8.09	870	246	214,012	1,605,156	5,192,577	3.23	4
250 to 299		3		5.76		1.54	267	254	67,748	520,515	1,954,313	3.75	1
Total	16	1,182	.40	29.40	.16	11.65	25,490	200	5,087,056	40,201,033	101,431,177	2.52	1,664

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TABLE 48.—*Injury experience, employment, and production data on Pennsylvania anthracite mines, by number of men employed, 1953*

Number of men employed	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
			Per million man-hours		Per million tons								
	Fatal	Non-fatal	Fatal	Non-fatal	Fatal	Non-fatal							
Underground mines:													
1 to 4	4	14	25.44	89.04	35.78	125.24	124	185	22,898	157,235	111,784	0.71	35
5 to 9	5	30	6.05	36.32	8.78	52.65	529	217	114,612	826,004	569,785	.69	75
10 to 14	2	22	3.89	42.79	7.55	83.00	367	195	71,713	514,114	265,059	.52	31
15 to 19	1	59	1.02	60.36	1.79	105.58	613	220	135,014	977,400	558,816	.57	35
20 to 24		23		72.11		140.73	224	196	43,977	318,941	163,430	.51	10
25 to 49	6	159	3.71	98.23	6.84	181.24	1,212	186	225,609	1,618,636	877,300	.54	36
50 to 74		117		101.34		262.20	942	169	159,280	1,154,584	446,221	.39	15
75 to 99		96		94.40		209.47	751	197	147,952	1,016,919	458,307	.45	9
100 to 124		104		68.11		203.80	1,127	182	204,792	1,526,926	510,295	.33	10
125 to 149	2	178	1.12	99.70	2.95	262.33	1,388	178	246,831	1,785,408	678,538	.38	10
150 to 174		42		46.30		193.88	635	181	114,969	907,110	216,625	.24	4
175 to 199	4	63	3.09	48.65	8.56	134.89	1,136	151	171,356	1,294,909	467,042	.36	6
200 to 249	2	226	.57	64.76	1.45	163.54	2,902	156	451,905	3,490,004	1,381,906	.40	13
250 to 299	2	105	1.28	67.35	4.42	232.11	1,850	113	208,363	1,558,976	452,378	.29	7
300 to 399	12	438	1.71	62.38	5.02	183.35	5,735	160	918,447	7,021,634	2,388,892	.34	16
400 to 499		66		50.94		471.89	874	195	170,567	1,295,750	139,862	.11	2
500 to 599	2	160	.59	47.32	2.08	166.59	3,099	155	481,171	3,381,098	960,435	.28	6
600 or over	21	1,781	.82	69.43	2.84	241.11	21,424	161	3,458,313	25,650,938	7,386,748	.29	23
Surface[1]	1	152	.18	27.44			4,191	180	754,058	5,538,507			
Total	64	3,835	1.07	63.88	3.55	212.66	49,123	165	8,101,827	60,035,093	18,033,423	.30	343
Strip mines:													
1 to 4							16	117	1,867	14,913	6,447	.43	4
5 to 9		15		42.34		23.96	246	203	49,815	354,252	626,071	1.77	37
10 to 14		4		13.95		9.75	189	208	39,339	286,781	410,143	1.43	16
15 to 19		8		21.68		12.05	302	171	51,727	369,071	664,119	1.80	18
20 to 24		14		28.18		20.93	339	206	69,762	496,746	668,827	1.35	16
25 to 49		76		35.77		28.12	1,449	207	299,458	2,124,679	2,702,410	1.27	40
50 to 74		22		34.39		45.72	480	191	91,717	639,653	481,159	.75	8
75 to 99		66		45.23		35.55	1,098	188	206,697	1,459,207	1,856,776	1.27	13
100 to 124							104	160	16,620	116,313	93,966	.81	1
125 to 149		2		7.23		12.46	141	280	39,540	276,792	160,571	.58	1
150 or over		72		35.72		31.76	1,429	196	280,268	2,015,543	2,267,169	1.12	5
Total		279		34.22		28.08	5,793	198	1,146,810	8,153,950	9,937,358	1.22	159
Washeries:													
1 to 4							4	151	604	4,228	5,500	1.30	1
5 to 9		1		106.88		18.53	16	76	1,210	9,356	53,953	5.77	2
10 to 14		11		36.40		11.78	236	166	39,196	302,175	934,007	3.09	19
15 to 19		1		10.70		6.28	87	149	12,984	93,441	159,282	1.70	5
20 to 24		4		111.00		76.07	22	234	5,148	36,036	52,580	1.46	1
25 to 49		7		17.91		6.64	302	184	55,515	390,810	1,054,195	2.70	8
Total		24		28.71		10.62	667	172	114,657	836,046	2,259,517	2.70	36
Dredges:													
1 to 4		1		91.01		74.09	10	126	1,256	10,988	13,498	1.23	4
5 to 9		4		73.44		67.55	34	181	6,154	54,464	59,212	1.09	5
10 to 14							11	260	2,860	22,880	9,048	.40	1
50 to 74		3		18.60		14.54	63	320	20,160	161,278	206,303	1.28	1
Total		8		32.05		27.77	118	258	30,430	249,610	288,061	1.15	11

[1] Data on 93 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 49.—*Injury experience, employment, and production data on Pennsylvania anthracite mines, by number of men employed, 1954*

Number of men employed	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
			Per million man-hours		Per million tons								
	Fatal	Non-fatal	Fatal	Non-fatal	Fatal	Non-fatal							
Underground mines:													
1 to 4	12	16	60.01	80.02	101.35	135.14	186	152	28,249	199,961	118,400	0.59	53
5 to 9	1	12	2.04	24.49	3.92	47.06	337	208	70,042	490,070	255,012	.52	50
10 to 14	2	31	2.96	45.89	4.59	71.08	439	218	95,656	675,478	436,113	.65	36
15 to 19	1	30	1.95	58.52	4.02	120.50	338	213	71,965	512,617	248,972	.49	20
20 to 24		27		74.76		96.83	261	195	50,965	361,143	278,848	.77	12
25 to 49	1	75	.91	68.40	1.60	119.66	857	179	153,189	1,096,445	626,802	.57	25
50 to 74	1	35	2.30	80.51	4.56	159.62	353	176	62,245	434,739	219,265	.50	6
75 to 99	1	79	1.69	133.22	3.44	271.61	521	163	84,704	592,989	290,859	.49	6
100 to 124		121		55.08		133.61	1,828	169	309,010	2,196,747	905,595	.41	16
125 to 149	1	51	1.28	65.34	2.32	118.28	541	205	110,859	780,586	431,167	.55	4
150 to 174							164	47	7,683	60,704	15,842	.26	1
175 to 199	1	124	.50	62.17	1.36	168.96	1,503	171	257,641	1,994,475	733,907	.37	8
200 to 249	3	303	.83	83.49	1.99	201.10	2,781	175	487,411	3,629,134	1,506,742	.42	12
250 to 299	1	202	.38	77.27	1.22	245.63	2,468	144	354,284	2,614,043	822,386	.31	9
300 to 399	7	142	2.80	56.84	5.48	111.22	1,992	169	337,430	2,498,338	1,276,724	.51	6
400 to 499	5	251	1.59	79.71	4.95	248.65	2,609	161	419,077	3,148,878	1,009,450	.32	6
500 to 599	3	103	1.57	53.84	4.68	160.60	1,726	148	254,718	1,913,042	641,346	.34	3
600 or over	14	1,056	.90	67.86	2.47	185.94	13,657	153	2,089,111	15,561,644	5,679,131	.36	16
Surface[1]	2	138	.43	29.54			3,638	175	637,789	4,670,969			
Total	56	2,796	1.29	64.38	3.61	180.43	36,199	162	5,882,028	43,432,002	15,496,561	.36	289
Strip mines:													
1 to 4		2		417.28		294.12	11	61	671	4,793	6,800	1.42	3
5 to 9	1	1	5.47	5.47	3.29	3.29	125	192	24,016	182,720	304,208	1.66	18
10 to 14		13		38.33		19.82	261	185	48,264	339,153	655,898	1.93	22
15 to 19		7		19.72		11.23	268	185	49,698	354,880	623,381	1.76	16
20 to 24		9		21.20		10.60	284	213	60,512	424,504	848,795	2.00	13
25 to 49	3	49	2.18	35.61	1.47	24.05	972	200	194,210	1,376,055	2,037,052	1.48	27
50 to 74	1	47	.80	37.69	.46	21.67	942	187	176,247	1,247,119	2,169,081	1.74	16
75 to 99		7		13.78		8.66	350	202	70,859	507,891	808,077	1.59	4
100 to 124							207	135	27,922	206,241	311,867	1.51	2
125 to 149							258	124	31,948	231,056	228,445	.99	2
150 to 174	1	8	3.74	29.89	4.26	34.11	151	253	38,230	267,614	234,558	.88	1
175 to 199		4		14.44		7.69	386	100	38,552	277,038	520,464	1.88	2
300 to 399		1		7.90		6.90	323	56	18,073	126,515	144,911	1.15	1
400 or over		12		23.23		14.25	439	163	71,624	516,475	842,217	1.63	1
Total	6	160	.99	26.39	.62	16.43	4,977	171	850,826	6,062,054	9,735,754	1.61	128
Washeries:													
1 to 4							23	227	5,212	36,491	485,310	13.30	7
5 to 9		2		70.32		27.62	28	143	4,001	28,443	72,409	2.55	4
10 to 14		2		25.90		4.32	71	156	11,085	77,225	462,771	5.99	6
15 to 19							68	165	11,203	79,192	273,800	3.46	4
20 to 24		4		47.61		7.01	67	172	11,526	84,024	570,777	6.79	3
25 to 49		3		28.84		5.30	105	139	14,608	104,014	565,936	5.44	3
125 or over							145	128	18,560	129,920	805,490	6.20	1
Total		11		20.40		3.40	507	150	76,195	539,309	3,236,493	6.00	28
Dredges:													
1 to 4							2	66	132	1,056			1
5 to 9		1		24.09		28.98	23	208	4,793	41,512	34,507	.83	3
10 to 14							11	135	1,486	11,889	10,979	.92	1
50 or over		4		29.59		9.56	67	252	16,898	135,174	418,365	3.10	1
Total		5		26.37		10.78	103	226	23,309	189,631	463,851	2.45	6

[1] Data on 80 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 50.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by length of shift, 1953*

Length of shift, hours	Number of injuries		Frequency rate				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
5.5 to 6.4	.....	10	.....	40.96	.....	67.02	263	154	40,550	244,166	149,199	0.61	37
6.5 to 7.4	9	474	0.88	46.23	1.62	85.46	7,727	184	1,420,220	10,253,716	5,546,655	.54	306
7.5 to 8.4	361	18,207	.94	47.24	1.06	53.37	256,767	190	48,726,391	385,392,529	341,159,982	.89	6,425
8.5 to 9.4	5	89	2.38	42.36	2.09	37.26	1,114	213	236,835	2,100,887	2,388,804	1.14	7
All other	1	7	13.22	92.54	20.26	141.81	38	246	9,344	75,639	49,361	.65	7
Total	376	18,787	.94	47.20	1.08	53.79	265,909	190	50,433,340	398,066,937	349,294,001	.88	6,783

TABLE 51.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by length of shift, 1954*

Length of shift, hours	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
5.5 to 6.4	.....	11	.....	43.80	.....	67.55	262	159	41,619	251,143	162,836	0.65	36
6.5 to 7.4	7	354	0.84	42.25	1.42	71.70	6,474	180	1,162,395	8,378,227	4,937,079	.59	311
7.5 to 8.4	309	13,116	1.08	45.74	1.09	46.42	208,190	174	36,224,584	286,723,027	282,567,073	.99	5,905
8.5 to 9.4	2	81	.92	37.43	.70	28.44	1,485	167	248,058	2,164,294	2,848,059	1.32	70
All other	.....	2	.....	210.64	.....	318.83	18	92	1,658	9,495	6,273	.66	8
Total	318	13,564	1.07	45.59	1.09	46.69	216,429	174	37,678,314	297,526,186	290,521,320	.98	6,270

TABLE 52.—*Injury experience, employment, and production data on Pennsylvania anthracite mines (underground and surface works), by length of shift, 1953*

Length of shift, hours	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
5.5 to 6.4	2	17	8.12	68.98	15.90	135.14	187	209	39,021	246,443	125,792	0.51	9
6.5 to 7.4	47	2,787	1.29	76.23	3.65	216.64	30,817	166	5,127,922	36,561,609	12,864,554	.35	255
7.5 to 8.4	13	825	.80	50.91	2.81	178.50	12,816	157	2,007,648	16,204,096	4,621,908	.29	69
8.5 to 9.4	1	54	.67	36.38	2.37	128.21	1,112	156	173,178	1,484,438	421,169	.28	9
Surface[1]	1	152	.18	27.44	.....	.....	4,191	180	754,058	5,538,507	.....	.....	.....
Total	64	3,835	1.07	63.88	3.55	212.66	49,123	165	8,101,827	60,035,093	18,033,423	.30	343

[1] Data on 93 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 53.—*Injury experience, employment, and production data on Pennsylvania anthracite mines (underground and surface works), by length of shift, 1954*

Length of shift, hours	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
5.5 to 6.4	1	.....	13.77	.....	18.29	.....	53	223	11,836	72,645	54,677	0.75	11
6.5 to 7.4	42	2,031	1.53	73.96	3.57	172.56	24,408	157	3,820,342	27,460,226	11,769,613	.43	238
7.5 to 8.4	11	623	.99	56.13	3.00	169.91	7,996	175	1,396,355	11,099,895	3,666,550	.33	34
8.5 to 9.4	.....	4	.....	46.52	.....	.....	54	194	10,464	85,981	.....	.....	3
All other	.....	.....	.....	.....	.....	.....	50	105	5,242	42,286	5,721	.14	3
Surface[1]	2	138	.43	29.54	.....	.....	3,638	175	637,789	4,670,969	.....	.....	.....
Total	56	2,796	1.29	64.38	3.61	180.43	36,199	162	5,882,028	43,432,002	15,496,561	.36	289

[1] Data on 80 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 54.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by number of shifts, 1953*

Number of shifts	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
1	138	5,495	1.23	48.88	1.66	66.25	88,867	161	14,269,567	112,425,255	82,947,391	0.74	5,856
2	178	9,859	.94	52.10	.99	54.87	120,969	198	23,930,475	189,244,351	179,680,858	.95	728
3	59	3,359	.62	35.22	.69	39.15	55,411	218	12,104,328	95,380,357	85,798,518	.90	183
Combination	1	74	.98	72.76	1.15	85.33	662	195	128,970	1,016,974	867,234	.85	16
Total	376	18,787	.94	47.20	1.08	53.79	265,909	190	50,433,340	398,066,937	349,294,001	.88	6,783

TABLE 55.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by number of shifts, 1954*

Number of shifts	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
1	108	4,292	1.19	47.28	1.51	59.89	76,580	150	11,516,417	90,769,779	71,663,112	0.79	5,457
2	143	6,804	1.04	49.50	.95	45.40	94,964	183	17,389,295	137,146,451	119,874,955	1.09	653
3	65	2,358	.98	35.48	.99	35.97	43,136	195	8,411,866	66,461,811	65,554,001	.99	146
Combination	2	110	.70	38.62	.58	32.08	1,749	206	360,736	2,848,145	3,429,252	1.20	14
Total	318	13,564	1.07	45.59	1.09	46.69	216,429	174	37,678,314	297,526,186	290,521,320	.98	6,270

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TABLE 56.—*Injury experience, employment, and production data on Pennsylvania anthracite mines, by number of shifts, 1953*

Number of shifts	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Underground mines:													
1	43	2,196	1.33	67.74	3.92	200.33	28,074	156	4,393,462	32,417,771	10,961,644	0.34	273
2	20	1,479	.91	67.57	2.85	211.10	16,733	175	2,927,280	21,887,873	7,006,172	.32	63
3	.....	8	.....	41.90	.....	121.94	125	216	27,027	190,942	65,607	.34	7
Surface[1]	1	152	.18	27.44	.....	.....	4,191	180	754,058	5,538,507	.....	.....	.....
Total	64	3,835	1.07	63.88	3.55	212.66	49,123	165	8,101,827	60,035,093	18,033,423	.30	343
Strip mines:													
1	.....	190	.....	30.73	.....	27.22	4,523	193	870,883	6,183,076	6,980,425	1.13	123
2	.....	13	.....	21.67	.....	12.32	353	241	85,087	599,899	1,055,543	1.76	21
3	.....	76	.....	55.44	.....	39.97	917	208	190,840	1,370,975	1,901,390	1.39	15
Total	.....	279	.....	34.22	.....	28.08	5,793	198	1,146,810	8,153,950	9,937,358	1.22	159

[1] Data on 93 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE. 57.—*Injury experience, employment, and production data on Pennsylvania anthracite mines, by number of shifts, 1954*

Number of shifts	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Underground mines:													
1	39	1,553	1.67	66.55	4.07	162.16	20,599	154	3,173,654	23,337,171	9,576,941	0.41	222
2	15	1,087	1.00	72.39	2.63	190.45	11,601	173	2,012,413	15,014,862	5,707,631	.38	58
3	.....	13	.....	36.94	.....	66.93	323	155	50,166	351,966	194,225	.55	6
Combination	.....	5	.....	87.67	.....	281.47	38	211	8,006	57,034	17,764	.31	3
Surface[1]	2	138	.43	29.54	.....	.....	3,638	175	637,789	4,670,969	.....	.....	.....
Total	56	2,796	1.29	64.38	3.61	180.43	36,199	162	5,882,028	43,432,002	15,496,561	.36	289
Strip mines:													
1	4	71	1.24	22.09	.78	13.86	2,963	153	451,923	3,213,832	5,121,843	1.59	84
2	.....	20	.....	32.39	.....	17.63	394	221	87,163	617,433	1,134,581	1.84	18
3	2	69	.90	31.08	.58	19.94	1,604	193	310,188	2,219,925	3,459,736	1.56	25
Combination	.....	.....	.....	.....	.....	.....	16	97	1,552	10,864	19,594	1.80	1
Total	6	160	.99	26.39	.62	16.43	4,977	171	850,826	6,062,054	9,735,754	1.61	128

[1] Data on 80 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 58.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by days-active group, 1953*

Days active	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
1 to 49	10	180	3.67	66.10	5.31	95.56	11,695	29	344,589	2,723,161	1,883,576	0.69	944
50 to 99	15	573	1.46	55.67	1.92	73.21	17,667	74	1,301,183	10,292,886	7,827,020	.76	1,412
100 to 149	33	1,153	1.61	56.09	2.00	69.82	20,546	127	2,606,884	20,557,968	16,514,108	.80	1,390
150 to 199	104	5,130	1.14	56.06	1.27	62.58	64,465	180	11,623,781	91,516,965	81,975,726	.90	1,248
200 to 249	188	10,677	.76	43.10	.85	48.09	139,389	225	31,344,819	247,708,315	222,034,071	.90	1,483
250 to 299	23	961	.98	40.79	1.25	52.34	11,462	262	2,998,655	23,561,405	18,359,884	.78	274
300 or more	3	113	1.76	66.23	4.29	161.52	685	312	213,429	1,706,237	699,616	.41	32
Total	376	18,787	.94	47.20	1.08	53.79	265,909	190	50,433,340	398,066,937	349,294,001	.88	6,783

TABLE 59.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by days-active group, 1954*

Days active	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
1 to 49	7	251	1.95	70.05	2.49	89.11	15,775	29	451,840	3,582,953	2,816,709	0.79	1,039
50 to 99	14	490	1.39	48.80	1.70	59.54	16,806	76	1,271,045	10,041,651	8,229,699	.82	1,175
100 to 149	27	1,233	1.12	51.30	1.37	62.75	24,064	127	3,045,702	24,035,022	19,650,812	.82	1,166
150 to 199	118	3,960	1.27	42.67	1.29	43.34	65,416	179	11,739,630	92,798,297	91,375,545	.98	1,434
200 to 249	140	6,886	.92	45.44	.89	43.87	87,055	221	19,197,915	151,546,738	156,959,835	1.04	1,160
250 to 299	11	643	.84	49.27	1.17	68.56	6,314	263	1,661,139	13,050,505	9,378,921	.72	245
300 or more	1	101	.40	40.87	.47	47.87	999	311	311,043	2,471,020	2,109,799	.85	51
Total	318	13,564	1.07	45.59	1.09	46.69	216,429	174	37,678,314	297,526,186	290,521,320	.98	6,270

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TABLE 60.—*Injury experience, employment, and production data on Pennsylvania anthracite mines, by days-active group, 1953*

Days active	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Underground mines:													
1 to 49	3	55	5.12	93.91	17.55	321.77	2,168	37	80,248	585,649	170,932	0.29	19
50 to 99	3	85	2.26	64.09	11.13	315.34	2,161	83	180,425	1,326,346	269,549	.20	15
100 to 149	8	464	1.36	78.93	4.71	273.41	5,856	139	814,936	5,878,351	1,697,114	.29	33
150 to 199	33	2,002	.96	58.47	3.22	195.31	26,871	168	4,508,468	34,239,489	10,250,233	.30	107
200 to 249	12	980	1.11	90.73	2.59	211.56	6,998	219	1,530,264	10,800,717	4,632,192	.43	106
250 to 299	3	79	2.10	55.19	3.35	88.16	772	260	201,003	1,431,381	896,064	.63	54
300 or more	1	18	4.26	76.71	8.52	153.40	106	306	32,425	234,653	117,339	.50	9
Surface[1]	1	152	.18	27.44	.....	.....	4,191	180	754,058	5,538,507	.....	.....	.....
Total	64	3,835	1.07	63.88	3.55	212.66	49,123	165	8,101,827	60,035,093	18,033,423	.30	343
Strip mines:													
1 to 49	.....	2	.....	65.66	.....	64.06	194	22	4,172	30,459	31,221	1.03	7
50 to 99	.....	8	.....	52.51	.....	33.54	269	79	21,356	152,360	238,538	1.57	13
100 to 149	.....	.....	.....	.....	.....	.....	293	132	38,539	276,383	397,421	1.44	11
150 to 199	.....	102	.....	38.71	.....	30.69	2,090	177	369,863	2,634,652	3,323,062	1.26	39
200 to 249	.....	126	.....	38.58	.....	31.25	2,038	226	460,215	3,266,059	4,031,963	1.23	58
250 to 299	.....	31	.....	20.38	.....	20.67	790	272	214,995	1,521,142	1,499,892	.99	24
300 or more	.....	10	.....	36.64	.....	24.08	119	317	37,670	272,895	415,261	1.52	7
Total	.....	279	.....	34.22	.....	28.08	5,793	198	1,146,810	8,153,950	9,937,358	1.22	159

[1] Data on 93 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 61.—*Injury experience, employment, and production data on Pennsylvania anthracite mines, by days-active group, 1954*

Days active	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Underground mines:													
1 to 49	3	49	2.97	48.57	10.43	170.28	2,865	49	139,156	1,008,899	287,760	0.29	29
50 to 99	3	205	1.02	69.88	3.37	230.40	5,548	74	408,729	2,933,433	889,765	.30	29
100 to 149	7	260	2.07	77.04	5.63	209.20	3,730	126	468,979	3,374,894	1,242,807	.37	27
150 to 199	9	610	.95	64.46	2.55	173.08	7,151	178	1,274,132	9,463,642	3,524,417	.37	55
200 to 249	30	1,440	1.46	70.26	3.44	165.25	12,486	220	2,742,037	20,495,664	8,714,303	.43	93
250 to 299	2	79	1.58	62.56	2.68	105.71	682	265	181,049	1,262,828	747,344	.59	46
300 or more	.....	15	.....	67.67	.....	166.36	99	305	30,157	221,673	90,165	.41	10
Surface[1]	2	138	.43	29.54	.....	.....	3,638	175	637,789	4,670,969	.....	.....	.....
Total	56	2,796	1.29	64.38	3.61	180.43	36,199	162	5,882,028	43,432,002	15,496,561	.36	289
Strip mines:													
1 to 49	.....	4	.....	46.79	.....	32.11	386	32	12,195	85,480	124,557	1.46	11
50 to 99	.....	3	.....	10.50	.....	9.09	681	60	40,581	285,599	330,024	1.16	11
100 to 149	2	16	3.65	29.21	2.02	16.20	570	134	76,351	547,683	987,768	1.80	15
150 to 199	.....	51	.....	32.65	.....	19.13	1,290	169	218,360	1,562,219	2,666,391	1.71	27
200 to 249	3	55	1.41	25.81	.79	14.41	1,317	227	299,450	2,131,016	3,817,991	1.79	40
250 to 299	1	30	.87	26.09	.69	20.70	614	267	164,081	1,149,765	1,448,957	1.26	17
300 or more	.....	1	.....	3.33	.....	2.78	119	335	39,808	300,292	360,066	1.20	7
Total	6	160	.99	26.39	.62	16.43	4,977	171	850,826	6,062,054	9,735,754	1.61	128

[1] Data on 80 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 62.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by thickness of bed or vein, 1953*

Thickness of bed or vein, inches	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Less than 24	2	44	1.45	31.86	4.01	88.19	1,292	137	176,697	1,381,017	498,903	0.36	63
25 to 36	27	1,589	.90	53.04	1.38	81.28	21,071	179	3,774,114	29,956,506	19,549,856	.65	640
37 to 48	91	5,324	.96	56.21	1.23	71.73	63,774	188	11,965,621	94,723,232	74,221,658	.78	1,118
49 to 60	73	3,609	1.10	54.53	1.18	58.21	43,485	193	8,387,594	66,181,528	62,001,847	.94	548
61 to 72	50	2,117	.86	36.54	.90	38.07	35,417	208	7,358,812	57,936,445	55,614,199	.96	388
73 to 84	36	2,215	.79	48.52	.69	42.50	28,756	201	5,781,491	45,653,297	52,111,713	1.14	202
85 to 96	38	1,223	.99	31.89	1.04	33.47	22,942	213	4,876,672	38,355,777	36,540,452	.95	124
97 to 108	6	269	.58	25.83	.53	23.62	6,458	205	1,322,162	10,415,572	11,387,140	1.09	59
109 or more	8	601	.67	50.00	.72	54.00	7,472	205	1,531,575	12,019,972	11,129,593	.93	80
Not stated	39	1,719	1.09	48.01	1.49	65.51	31,846	141	4,504,044	35,801,599	26,238,640	.73	3,561
Surface[1]	6	77	1.06	13.65			3,396	222	754,558	5,638,992			
Total	376	18,787	.94	47.20	1.08	53.79	265,909	190	50,433,340	398,066,937	349,294,001	.88	6,783

[1] Data on 49 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 63.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by thickness of bed or vein, 1954*

Thickness of bed or vein, inches	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Less than 24	2	60	1.44	43.26	2.89	86.75	1,242	143	177,432	1,386,803	691,629	0.50	79
25 to 36	31	1,120	1.38	49.92	1.90	68.56	16,732	169	2,830,771	22,435,592	16,336,476	.73	701
37 to 48	89	3,816	1.22	52.34	1.41	60.38	53,231	173	9,222,342	72,906,287	63,198,052	.87	1,175
49 to 60	44	2,422	1.03	56.96	.96	52.69	30,441	177	5,398,675	42,521,662	45,966,641	1.08	542
61 to 72	47	1,715	1.08	39.29	.95	34.71	30,943	178	5,511,206	43,654,933	49,404,247	1.13	408
73 to 84	29	1,466	.91	45.98	.74	37.19	21,673	187	4,042,776	31,882,869	39,419,282	1.24	187
85 to 96	20	1,017	.56	28.26	.52	26.44	23,945	191	4,567,187	35,984,794	38,462,547	1.07	129
97 to 108	3	132	.64	28.25	.46	20.21	3,353	176	591,716	4,672,975	6,532,297	1.40	51
109 or more	9	371	1.13	46.55	1.03	42.44	5,772	177	1,020,125	7,969,845	8,741,876	1.10	83
Not stated	43	1,360	1.47	46.42	1.98	62.48	26,235	140	3,672,791	29,299,667	21,768,273	.74	2,915
Surface[1]	1	85	.21	17.67			2,862	225	643,293	4,810,759			
Total	318	13,564	1.07	45.59	1.09	46.69	216,429	174	37,678,314	297,526,186	290,521,320	.98	6,270

[1] Data on 51 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 64.—*Injury experience, employment, and production data on Pennsylvania anthracite mines (underground and surface works), by thickness of bed or vein, 1953*

Thickness of bed or vein, inches	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Less than 24	4	20	7.37	36.87	18.39	91.94	413	180	74,298	542,461	217,499	0.40	15
25 to 36	-------	59	-------	64.15	-------	152.80	654	189	123,683	919,710	386,120	.42	23
37 to 48	1	154	.67	103.80	1.68	259.23	1,076	185	198,845	1,483,617	594,075	.40	23
49 to 60	6	393	1.08	70.58	3.18	208.46	4,290	176	753,640	5,567,772	1,885,218	.34	34
61 to 72	3	312	.56	57.85	1.95	203.29	4,132	167	691,629	5,393,062	1,534,730	.28	35
73 to 84	4	201	1.58	79.19	3.55	178.27	1,913	181	345,933	2,538,340	1,127,500	.44	23
85 to 96	10	308	1.94	59.84	6.24	192.15	3,930	166	654,059	5,147,254	1,602,882	.31	33
97 to 108	-------	28	-------	95.87	-------	215.63	928	45	41,552	292,061	129,850	.44	9
109 or more	13	1,126	.77	66.29	2.18	189.02	14,450	164	2,366,037	16,985,738	5,956,915	.35	54
Not stated	22	1,082	1.41	69.24	4.78	235.29	13,146	160	2,098,093	15,626,581	4,598,634	.29	94
Surface[1]	1	152	.18	27.44	-------	-------	4,191	180	754,058	5,538,507	-------	-------	-------
Total	64	3,835	1.07	63.88	3.55	212.66	49,123	165	8,101,827	60,035,093	18,033,423	.30	343

[1] Data on 93 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 65.—*Injury experience, employment, and production data on Pennsylvania anthracite mines (underground and surface works), by thickness of bed or vein, 1954*

Thickness of bed or vein, inches	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Less than 24	-------	5	-------	23.01	-------	61.80	195	153	29,789	217,259	80,912	0.37	8
25 to 36	1	32	1.64	52.52	3.46	110.69	535	162	86,735	609,263	289,085	.47	21
37 to 48	2	83	2.27	94.01	3.76	156.22	905	138	125,121	882,874	531,306	.60	23
49 to 60	8	216	2.42	65.45	8.40	226.67	2,780	163	452,574	3,300,445	952,930	.29	44
61 to 72	5	282	1.31	73.61	2.88	162.24	3,509	142	497,190	3,831,198	1,738,175	.45	26
73 to 84	5	135	2.50	67.41	5.69	153.72	1,560	168	262,208	2,002,615	878,238	.44	17
85 to 96	7	228	1.63	52.97	4.96	161.69	3,117	179	556,753	4,304,021	1,410,102	.33	24
97 to 108	-------	31	-------	29.02	-------	87.31	863	177	152,646	1,068,218	355,069	.33	8
109 or more	9	648	1.06	76.51	2.31	166.35	9,948	121	1,201,267	8,469,300	3,895,318	.46	54
Not stated	17	998	1.21	70.90	3.17	186.01	9,149	205	1,879,956	14,075,840	5,365,426	.38	64
Surface[1]	2	138	.43	29.54	-------	-------	3,638	175	637,789	4,670,969	-------	-------	-------
Total	56	2,796	1.29	64.38	3.61	180.43	36,199	162	5,882,028	43,432,002	15,496,561	.36	289

[1] Data on 80 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 66.—*Injury experience, employment, and production data on bituminous-coal mines in the United States, by production group, 1953*

Production group (tons)	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Underground mines:													
Less than 25,000	75	2,127	1.86	52.86	2.98	84.37	41,982	121	5,088,741	40,239,286	25,209,280	0.63	5,433
25,000 to 49,999	17	1,140	.90	60.15	1.22	81.56	15,256	157	2,396,942	18,953,351	13,977,033	.74	389
50,000 to 99,999	21	1,281	.99	60.60	1.25	76.41	16,182	166	2,680,104	21,138,603	16,765,554	.79	211
100,000 to 249,999	51	4,015	.75	59.41	.91	71.65	46,492	184	8,554,928	67,585,623	56,034,229	.83	339
250,000 to 499,999	75	4,619	.89	55.02	1.03	63.47	51,787	205	10,633,499	83,948,518	72,780,137	.87	204
500,000 to 749,999	49	1,947	1.00	39.77	1.04	41.23	28,738	215	6,185,242	48,958,243	47,218,623	.96	78
750,000 to 999,999	28	1,371	.73	35.83	.74	36.28	21,568	224	4,840,037	38,268,899	37,794,003	.99	44
1,000,000 or more	54	2,210	.74	30.14	.68	27.79	40,508	230	9,299,289	73,335,422	79,515,142	1.08	55
Surface[1]	6	77	1.06	13.65	-------	-------	3,396	222	754,558	5,638,992	-------	-------	-------
Total	376	18,787	.94	47.20	1.08	53.79	265,909	190	50,433,340	398,066,937	349,294,001	.88	6,783
Strip mines:													
Less than 25,000	5	169	.95	32.06	.69	23.27	5,919	111	656,219	5,271,781	7,262,197	1.38	1,004
25,000 to 49,999	4	131	.87	28.35	.51	16.65	3,364	170	572,023	4,621,140	7,867,894	1.70	273
50,000 to 99,999	5	231	.64	29.67	.34	15.90	4,881	197	963,791	7,784,757	14,527,868	1.87	274
100,000 to 249,999	4	304	.37	28.43	.18	13.82	5,575	239	1,335,114	10,692,627	21,996,357	2.06	166
250,000 to 499,999	-------	207	-------	30.88	-------	11.14	3,838	223	857,577	6,702,997	18,578,818	2.77	64
500,000 to 749,999	2	145	.36	25.95	.11	8.32	2,982	247	736,807	5,586,632	17,427,458	3.12	29
750,000 to 999,999	-------	46	-------	24.07	-------	8.03	1,089	227	246,931	1,911,081	5,725,090	3.00	7
1,000,000 or more	1	92	.27	24.99	.08	6.97	1,868	264	492,372	3,680,887	13,205,778	3.59	10
Total	21	1,325	.45	28.65	.20	12.43	29,516	199	5,860,834	46,251,902	106,591,460	2.30	1,827

[1] Data on 49 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 67.—*Injury experience, employment, and production data on bituminous-coal mines in the United States, by production group, 1954*

Production group (tons)	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Underground mines:													
Less than 25,000	66	1,859	1.74	49.08	2.66	74.84	42,027	114	4,789,549	37,879,242	24,838,164	0.66	5,136
25,000 to 49,999	16	786	1.05	51.67	1.34	65.99	13,081	146	1,916,135	15,211,252	11,910,022	.78	335
50,000 to 99,999	25	1,128	1.29	58.28	1.53	68.91	16,574	148	2,449,663	19,356,348	16,369,064	.85	230
100,000 to 249,999	42	2,615	.95	59.21	1.04	64.85	32,207	174	5,601,553	44,163,964	40,326,369	.91	249
250,000 to 499,999	63	2,971	1.03	48.77	1.03	48.42	39,012	198	7,720,365	60,914,058	61,356,482	1.01	170
500,000 to 749,999	36	1,619	.93	41.64	.85	38.22	24,371	202	4,911,441	38,879,785	42,361,644	1.09	68
750,000 to 999,999	46	1,151	1.27	31.68	1.10	27.54	22,521	205	4,615,745	36,330,184	41,791,374	1.15	48
1,000,000 or more	23	1,350	.58	33.77	.45	26.18	23,774	212	5,030,570	39,980,594	51,568,201	1.29	34
Surface[1]	1	85	.21	17.67	-------	-------	2,862	225	643,293	4,810,759	-------	-------	-------
Total	318	13,564	1.07	45.59	1.09	46.69	216,429	174	37,678,314	297,526,186	290,521,320	.98	6,270
Strip mines:													
Less than 25,000	4	249	.74	45.84	.51	31.55	5,516	122	675,068	5,431,497	7,891,440	1.45	1,036
25,000 to 49,999	2	150	.43	31.89	.24	18.02	3,144	184	578,217	4,703,084	8,322,069	1.77	227
50,000 to 99,999	3	166	.44	24.37	.23	12.91	3,872	216	836,605	6,810,554	12,858,739	1.89	180
100,000 to 249,999	4	238	.45	26.67	.20	11.78	4,864	230	1,117,683	8,924,245	20,204,574	2.26	131
250,000 to 499,999	-------	146	-------	27.55	-------	8.12	3,048	226	688,245	5,300,190	17,973,677	3.39	48
500,000 to 749,999	2	109	.47	25.80	.13	7.04	2,432	230	558,681	4,224,455	15,480,172	3.66	25
750,000 to 999,999	-------	64	-------	35.36	-------	10.87	1,036	227	235,384	1,809,936	5,886,675	3.25	7
1,000,000 or more	1	60	.33	20.02	.08	4.68	1,578	252	397,173	2,997,072	12,813,831	4.28	10
Total	16	1,182	.40	29.40	.16	11.65	25,490	200	5,087,056	40,201,033	101,431,177	2.52	1,664

[1] Data on 51 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 68.—*Injury experience, employment, and production data on Pennsylvania anthracite mines, by production group, 1953*

Production group (tons)	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Underground mines:													
Less than 25,000	16	382	2.39	56.96	9.01	215.05	5,380	164	883,768	6,706,855	1,776,348	0.26	215
25,000 to 49,999	4	227	1.36	76.95	2.87	163.12	3,042	134	406,150	2,949,942	1,391,583	.47	38
50,000 to 99,999	9	632	1.00	70.44	2.91	204.35	7,904	151	1,196,553	8,971,619	3,092,711	.34	44
100,000 to 249,999	18	917	1.33	68.00	4.66	237.54	10,829	170	1,836,889	13,485,096	3,860,477	.29	26
250,000 to 499,999	9	1,197	.51	67.77	1.63	216.18	14,058	168	2,368,576	17,663,967	5,536,926	.31	16
500,000 to 749,999	7	328	1.48	69.50	2.95	138.08	3,719	176	655,833	4,719,107	2,375,378	.50	4
Surface[1]	1	152	.18	27.44	.....	.....	4,191	180	754,058	5,538,507	.....	.....	.....
Total	64	3,835	1.07	63.88	3.55	212.66	49,123	165	8,101,827	60,035,093	18,033,423	.30	343
Strip mines:													
Less than 25,000	.....	42	.....	38.96	.....	65.41	993	152	150,552	1,078,159	642,106	.60	66
25,000 to 49,999	.....	23	.....	23.43	.....	20.32	663	210	139,190	981,558	1,131,911	1.15	29
50,000 to 99,999	.....	75	.....	32.93	.....	21.89	1,676	192	321,883	2,277,900	3,425,703	1.50	42
100,000 to 249,999	.....	80	.....	33.45	.....	27.74	1,421	238	337,796	2,391,981	2,884,102	1.21	19
250,000 to 499,999	.....	16	.....	35.85	.....	37.59	365	171	62,479	446,253	425,663	.95	1
500,000 or more	.....	43	.....	43.96	.....	30.11	675	200	134,910	978,099	1,427,873	1.46	2
Total	.....	279	.....	34.22	.....	28.08	5,793	198	1,146,810	8,153,950	9,937,358	1.22	159
Washeries:													
Less than 25,000	.....	3	.....	19.38	.....	16.22	141	146	20,584	154,820	184,982	1.19	11
25,000 to 49,999	.....	2	.....	17.95	.....	8.22	80	174	13,928	111,424	243,195	2.18	6
50,000 to 99,999	.....	17	.....	59.17	.....	21.84	205	194	39,842	287,331	778,479	2.71	12
100,000 to 249,999	.....	2	.....	7.08	.....	1.90	241	167	40,303	282,471	1,052,861	3.73	7
Total	.....	24	.....	28.71	.....	10.62	667	172	114,657	836,046	2,259,517	2.70	36
Dredges:													
Less than 25,000	.....	5	.....	56.60	.....	61.16	55	187	10,270	88,332	81,758	.93	10
100,000 or more	.....	3	.....	18.60	.....	14.54	63	320	20,160	161,278	206,303	1.28	1
Total	.....	8	.....	32.05	.....	27.77	118	258	30,430	249,610	288,061	1.15	11

[1] Data on 93 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 69.—*Injury experience, employment, and production data on Pennsylvania anthracite mines, by production group, 1954*

Production group (tons)	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Underground mines:													
Less than 25,000	17	290	3.05	52.06	11.94	203.74	4,475	166	740,710	5,570,653	1,423,408	0.26	190
25,000 to 49,999	3	204	.88	59.83	2.41	163.69	3,908	121	473,397	3,409,944	1,246,247	.37	36
50,000 to 99,999	2	247	.54	67.05	1.31	161.84	3,301	156	514,174	3,683,927	1,526,243	.41	21
100,000 to 249,999	14	884	1.28	81.03	3.36	212.36	10,732	139	1,489,600	10,909,724	4,162,659	.38	27
250,000 to 499,999	9	491	1.35	73.50	3.42	186.69	5,081	178	902,608	6,680,543	2,629,996	.39	8
500,000 to 749,999	8	336	1.38	58.05	2.78	116.78	3,322	225	746,596	5,787,649	2,877,245	.50	5
750,000 or more	1	206	.37	75.77	.61	126.32	1,742	217	377,154	2,718,593	1,630,763	.60	2
Surface[1]	2	138	.43	29.54	------	------	3,638	175	637,789	4,670,969	------	------	------
Total	56	2,796	1.29	64.38	3.61	180.43	36,199	162	5,882,028	43,432,002	15,496,561	.36	289
Strip mines:													
Less than 25,000	1	24	1.81	43.46	2.13	51.20	688	112	77,254	552,257	468,723	.85	39
25,000 to 49,999	1	18	1.15	20.77	.89	16.02	868	140	121,843	866,722	1,123,590	1.30	33
50,000 to 99,999	3	23	2.52	19.29	1.61	12.37	751	223	167,667	1,192,579	1,859,761	1.56	25
100,000 to 249,999	1	69	.45	31.24	.28	19.29	1,712	182	311,549	2,208,477	3,576,561	1.62	25
250,000 to 499,999	------	14	------	19.30	------	7.51	519	194	100,889	725,544	1,864,902	2.57	5
750,000 or more	------	12	------	23.23	------	14.25	439	163	71,624	516,475	842,217	1.63	1
Total	6	160	.99	26.39	.62	16.43	4,977	171	850,826	6,062,054	9,735,754	1.61	128
Washeries:													
Less than 25,000	------	------	------	------	------	------	95	61	5,808	41,195	79,329	1.93	8
25,000 to 49,999	------	4	------	34.61	------	15.57	92	177	16,276	115,590	256,932	2.22	6
50,000 to 99,999	------	1	------	11.74	------	3.46	56	216	12,107	85,144	288,778	3.39	4
100,000 to 249,999	------	4	------	40.53	------	4.46	67	210	14,098	98,696	896,693	9.09	7
250,000 to 499,999	------	------	------	------	------	------	22	152	3,346	26,764	393,016	14.68	1
500,000 to 749,999	------	2	------	47.62	------	3.87	30	200	6,000	42,000	516,255	12.29	1
750,000 or more	------	------	------	------	------	------	145	128	18,560	129,920	805,490	6.20	1
Total	------	11	------	20.40	------	3.40	507	150	76,195	539,309	3,236,493	6.00	28
Dredges:													
Less than 25,000	------	1	------	18.36	------	21.98	36	178	6,411	54,457	45,486	.84	5
250,000 to 499,999	------	4	------	29.59	------	9.56	67	252	16,898	135,174	418,365	3.10	1
Total	------	5	------	26.37	------	10.78	103	226	23,309	189,631	463,851	2.45	6

[1] Data on 80 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 70.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by kind of mine opening, 1953*

Kind of opening	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Shaft	59	3,126	0.72	38.24	0.81	43.02	51,589	201	10,353,974	81,740,809	72,658,288	0.89	299
Slope	73	3,423	1.10	51.36	1.05	49.02	43,644	194	8,473,923	66,641,745	69,823,682	1.05	658
Drift	197	10,558	.93	49.73	1.07	57.14	138,572	194	26,862,421	212,320,195	184,778,100	.87	2,328
Not stated	41	1,603	1.29	50.53	1.86	72.75	28,708	139	3,988,464	31,725,196	22,033,931	.69	3,498
Surface[1]	6	77	1.06	13.65	.....	.....	3,396	222	754,558	5,638,992	.....	.....	.....
Total	376	18,787	.94	47.20	1.08	53.79	265,909	190	50,433,340	398,066,937	349,294,001	.88	6,783

[1] Data on 49 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 71.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by kind of mine opening, 1954*

Kind of opening	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Shaft	44	2,033	0.78	36.03	0.81	37.41	40,816	175	7,155,922	56,432,890	54,338,576	0.96	267
Slope	74	2,576	1.46	50.95	1.22	42.47	36,168	178	6,432,029	50,561,429	60,660,085	1.20	622
Drift	172	7,498	1.10	48.05	1.12	48.92	110,249	179	19,735,393	156,034,610	153,260,163	.98	2,486
Not stated	27	1,372	.91	46.22	1.21	61.63	26,334	141	3,711,677	29,686,498	22,262,496	.75	2,895
Surface[1]	1	85	.21	17.67	.....	.....	2,862	225	643,293	4,810,759	.....	.....	.....
Total	318	13,564	1.07	45.59	1.09	46.69	216,429	174	37,678,314	297,526,186	290,521,320	.98	6,270

[1] Data on 51 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 72.—*Injury experience, employment, and production data on Pennsylvania anthracite mines (underground and surface works), by kind of mine opening, 1953*

Kind of opening	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Shaft	35	2,436	0.93	65.03	3.15	219.01	30,580	164	5,014,987	37,457,597	11,122,592	0.30	74
Slope	23	872	1.83	69.38	4.35	164.94	10,387	166	1,719,599	12,569,248	5,286,701	.42	192
Drift	3	110	1.82	66.74	4.71	172.70	1,775	128	226,515	1,648,234	636,951	.39	30
Not stated	2	265	.71	93.92	2.03	268.44	2,190	177	386,668	2,821,507	987,179	.35	47
Surface[1]	1	152	.18	27.44	.....	.....	4,191	180	754,058	5,538,507	.....	.....	.....
Total	64	3,835	1.07	63.88	3.55	212.66	49,123	165	8,101,827	60,035,093	18,033,423	.30	343

[1] Data on 93 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 73.—*Injury experience, employment, and production data on Pennsylvania anthracite mines (underground and surface works), by kind of mine opening, 1954*

Kind of opening	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
			Per million man-hours		Per million tons								
	Fatal	Non-fatal	Fatal	Non-fatal	Fatal	Non-fatal							
Shaft	29	1,723	1.20	71.05	3.20	190.00	21,329	153	3,263,125	24,251,861	9,070,357	0.37	63
Slope	19	738	1.71	66.29	3.65	141.60	8,448	182	1,536,437	11,133,641	5,211,909	.47	191
Drift	2	55	2.09	74.04	5.89	162.00	640	165	105,446	742,842	339,497	.46	24
Not stated	4	142	1.52	53.94	4.57	162.32	2,114	158	339,231	2,632,689	874,798	.33	11
Surface[1]	2	138	.43	29.54	-------	-------	3,638	175	637,789	4,670,969	-------	-------	-------
Total	56	2,796	1.29	64.38	3.61	180.43	36,199	162	5,882,028	43,432,002	15,496,561	.36	289

[1] Data on 80 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 74.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by kind of lamp, 1953*

Kind of lamp	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
			Per million man-hours		Per million tons								
	Fatal	Non-fatal	Fatal	Non-fatal	Fatal	Non-fatal							
Electric	289	16,052	0.85	47.35	0.93	51.59	216,474	198	42,931,211	339,031,514	311,158,888	0.92	1,821
Carbide	21	533	1.88	47.65	2.93	74.39	8,821	162	1,429,045	11,186,420	7,165,012	.64	1,127
Other	2	104	.79	40.91	.96	49.66	1,866	174	325,048	2,542,063	2,094,051	.82	41
Electric and carbide	4	70	2.64	46.25	2.77	48.44	1,099	176	193,003	1,513,542	1,445,172	.95	66
Other combinations	-------	-------	-------	-------	-------	-------	29	110	3,186	25,488	14,695	.58	3
Not stated	54	1,951	1.42	51.17	1.97	71.16	34,224	140	4,797,289	38,128,918	27,416,183	.72	3,725
Surface[1]	6	77	1.06	13.65	-------	-------	3,396	222	754,558	5,638,992	-------	-------	-------
Total	376	18,787	.94	47.20	1.08	53.79	265,909	190	50,433,340	398,066,937	349,294,001	.88	6,783

[1] Data on 49 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 75.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by kind of lamp, 1954*

Kind of lamp	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
			Per million man-hours		Per million tons								
	Fatal	Non-fatal	Fatal	Non-fatal	Fatal	Non-fatal							
Electric	256	11,260	1.04	45.95	1.00	44.05	172,018	180	31,041,835	245,035,293	255,608,604	1.04	1,755
Carbide	12	372	1.30	40.16	2.03	62.87	8,070	147	1,183,795	9,263,542	5,916,510	.64	1,269
Other	3	116	1.12	43.36	1.21	46.92	1,902	176	335,144	2,675,380	2,472,375	.92	97
Electric and carbide	1	54	.85	45.73	1.22	65.64	882	172	151,451	1,180,772	822,661	.70	67
Other combinations	1	21	3.86	81.03	5.43	113.94	179	187	33,501	259,160	184,309	.71	10
Not stated	44	1,656	1.28	48.28	1.72	64.90	30,516	141	4,289,295	34,301,280	25,516,861	.74	3,072
Surface[1]	1	85	.21	17.67	-------	-------	2,862	225	643,293	4,810,759	-------	-------	-------
Total	318	13,564	1.07	45.59	1.09	46.69	216,429	174	37,678,314	297,526,186	290,521,320	.98	6,270

[1] Data on 51 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 76.—*Injury experience, employment, and production data on Pennsylvania anthracite mines (underground and surface works), by kind of lamp, 1953*

Kind of lamp	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Electric	51	3,311	1.04	67.53	3.17	206.01	40,730	162	6,606,979	49,032,018	16,071,988	0.33	244
Carbide	3	34	3.86	43.70	10.08	114.20	553	188	103,730	777,979	297,713	.38	24
Electric and carbide	------	21	------	141.22	------	215.23	98	211	20,664	148,699	97,571	.66	7
Not stated	9	317	1.98	69.86	5.75	202.41	3,551	174	616,396	4,537,890	1,566,151	.35	68
Surface[1]	1	152	.18	27.44	------	------	4,191	180	754,058	5,538,507	------	------	------
Total	64	3,835	1.07	63.88	3.55	212.66	49,123	165	8,101,827	60,035,093	18,033,423	.30	343

[1] Data on 93 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 77.—*Injury experience, employment, and production data on Pennsylvania anthracite mines (underground and surface works), by kind of lamp, 1954*

Kind of lamp	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Electric	43	2,448	1.24	70.35	3.11	177.15	28,984	163	4,719,179	34,795,545	13,818,472	0.40	227
Carbide	3	6	9.05	18.11	19.03	38.06	341	133	45,246	331,400	157,640	.48	22
Other	------	2	------	28.02	------	73.60	63	148	9,350	71,369	27,174	.38	3
Electric and carbide	------	7	------	63.20	------	92.24	65	240	15,578	110,751	75,890	.69	3
Not stated	8	195	2.32	56.49	5.64	137.58	3,108	146	454,886	3,451,968	1,417,385	.41	34
Surface[1]	2	138	.43	29.54	------	------	3,638	175	637,789	4,670,969	------	------	------
Total	56	2,796	1.29	64.38	3.61	180.43	36,199	162	5,882,028	43,432,002	15,496,561	.36	289

[1] Data on 80 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 78.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by gas rating, 1953*

Gas rating	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Gassy	174	9,933	0.77	43.86	0.83	47.18	139,225	206	28,679,714	226,457,544	210,537,172	0.93	638
Nongassy	143	6,763	1.12	52.99	1.28	60.55	88,585	183	16,176,160	127,618,115	111,690,770	.88	2,333
Not rated	3	142	1.19	56.33	1.76	83.47	1,891	169	319,688	2,521,033	1,701,188	.67	96
Not stated	50	1,872	1.40	52.24	1.97	73.80	32,812	137	4,503,220	35,831,253	25,364,871	.71	3,716
Surface[1]	6	77	1.06	13.65	------	------	3,396	222	754,558	5,638,992	------	------	------
Total	376	18,787	.94	47.20	1.08	53.79	265,909	190	50,433,340	398,066,937	349,294,001	.88	6,783

[1] Data on 49 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 79.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by gas rating, 1954*

Gas rating	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Gassy	161	7,001	0.97	42.23	0.92	40.12	112,609	186	20,980,246	165,767,121	174,520,138	1.05	625
Nongassy	104	4,785	1.12	51.69	1.15	53.10	70,253	167	11,742,857	92,574,712	90,105,736	.97	2,523
Not rated	6	165	2.19	60.09	2.50	68.71	2,123	164	347,997	2,745,977	2,401,279	.87	100
Not stated	46	1,528	1.45	48.31	1.96	65.04	28,582	139	3,963,921	31,627,617	23,494,167	.74	3,022
Surface[1]	1	85	.21	17.67	-------	-------	2,862	225	643,293	4,810,759	-------	-------	-------
Total	318	13,564	1.07	45.59	1.09	46.69	216,429	174	37,678,314	297,526,186	290,521,320	.98	6,270

[1] Data on 51 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 80.—*Injury experience, employment, and production data on Pennsylvania anthracite mines (underground and surface works), by gas rating, 1953*

Gas rating	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Gassy	46	3,201	0.96	67.00	3.05	212.29	39,937	161	6,419,542	47,777,278	15,078,658	0.32	164
Nongassy	9	250	2.06	57.20	4.33	120.35	3,163	191	602,752	4,370,951	2,077,350	.48	134
Not rated	-------	19	-------	403.85	-------	693.66	36	187	6,721	47,047	27,391	.58	2
Not stated	8	213	3.48	92.56	9.41	250.58	1,796	177	318,754	2,301,310	850,024	.37	43
Surface[1]	1	152	.18	27.44	-------	-------	4,191	180	754,058	5,538,507	-------	-------	-------
Total	64	3,835	1.07	63.88	3.55	212.66	49,123	165	8,101,827	60,035,093	18,033,423	.30	343

[1] Data on 93 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 81.—*Injury experience, employment, and production data on Pennsylvania anthracite mines (underground and surface works), by gas rating, 1954*

Gas rating	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Gassy	38	2,323	1.16	71.18	3.00	183.38	27,593	160	4,412,188	32,636,853	12,667,641	0.39	145
Nongassy	8	175	2.48	54.18	4.41	96.57	2,592	176	455,501	3,230,271	1,812,115	.56	113
Not rated	-------	5	-------	99.23	-------	136.57	31	232	7,198	50,386	36,611	.73	1
Not stated	8	155	2.81	54.51	8.16	158.13	2,345	158	369,352	2,843,523	980,194	.34	30
Surface[1]	2	138	.43	29.54	-------	-------	3,638	175	637,789	4,670,969	-------	-------	-------
Total	56	2,796	1.29	64.38	3.61	180.43	36,199	162	5,882,028	43,432,002	15,496,561	.36	289

[1] Data on 80 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 82.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by type of explosive used, 1953*

Type of explosive	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Black blasting powder	14	440	1.71	53.90	2.42	76.07	5,894	177	1,040,673	8,163,892	5,783,981	0.71	334
Black blasting powder and permissibles	1	83	.93	77.07	1.59	132.34	849	171	145,512	1,076,879	627,180	.58	81
Black blasting powder and other high explosives[1]	2	117	.61	35.82	.65	38.22	2,168	192	416,753	3,266,156	3,061,554	.94	15
Permissibles	245	12,691	.86	44.80	1.00	51.72	181,002	198	35,859,708	283,260,904	245,380,414	.87	2,401
Permissibles and Cardox	2	307	.43	65.56	.58	88.77	3,737	158	591,313	4,682,939	3,458,570	.74	25
Permissibles and Airdox	7	675	.43	41.81	.49	47.41	9,825	208	2,047,573	16,143,089	14,238,025	.88	33
Other high explosives[1]	2	84	1.70	71.48	1.88	78.77	778	194	150,819	1,175,164	1,066,355	.91	26
Cardox		196		74.15		87.12	1,926	175	336,090	2,643,156	2,249,898	.85	29
Cardox and Airdox	2	98	1.30	63.66	1.27	62.40	995	196	194,601	1,539,312	1,570,447	1.02	5
Airdox	36	1,993	1.14	63.22	.83	46.03	20,743	192	3,992,270	31,522,487	43,296,407	1.37	88
None used	6	47	4.38	34.32	2.86	22.38	882	199	175,562	1,369,407	2,100,418	1.53	45
Combination of 3	1	48	1.20	57.45	1.71	82.21	477	221	105,604	835,562	583,881	.70	2
Cardox and 2 others	1	50	1.24	62.03	1.69	84.38	445	228	101,536	806,107	592,568	.74	2
Airdox and 2 others		5		93.40		163.00	42	155	6,524	53,533	30,675	.57	1
Not stated	51	1,876	1.42	52.27	2.02	74.29	32,750	138	4,514,244	35,889,358	25,253,628	.70	3,696
Surface[2]	6	77	1.06	13.65			3,396	222	754,558	5,638,992			
Total	376	18,787	.94	47.20	1.08	53.79	265,909	190	50,433,340	398,066,937	349,294,001	.88	6,783

[1] High explosives other than permissibles.

[2] Data on 49 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 83.—*Injury experience, employment, and production data on bituminous-coal mines (underground and surface works) in the United States, by type of explosive used, 1954*

Type of explosive	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Tons per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Black blasting powder	4	184	0.90	41.49	1.03	47.20	3,455	163	564,187	4,435,132	3,898,333	0.88	328
Black blasting powder and permissibles	1	27	1.43	38.54	2.03	54.74	624	145	90,447	700,633	493,220	.70	89
Black blasting powder and other high explosives[1]		2		105.30		265.25	54	44	2,374	18,994	7,540	.40	5
Permissibles	200	8,160	1.01	41.39	1.05	42.86	139,638	179	24,960,456	197,139,347	190,404,000	.97	2,467
Permissibles and other high explosives[1]	4	35	5.48	47.92	4.88	42.68	511	182	92,971	730,327	820,015	1.12	12
Permissibles and Cardox	3	265	.70	61.47	.76	67.26	3,621	151	546,013	4,311,257	3,940,160	.91	49
Permissibles and Airdox	24	1,061	1.27	56.29	1.18	52.37	11,086	215	2,383,064	18,847,380	20,259,510	1.07	55
Other high explosives[1]	1	260	.32	84.13	.36	93.97	2,257	174	392,640	3,090,306	2,766,740	.90	37
Other high explosives[1] and Cardox	1	1	38.08	38.08	49.38	49.38	20	166	3,329	26,263	20,250	.77	1
Cardox	1	112	.63	70.97	.57	64.23	1,578	128	202,593	1,578,069	1,743,865	1.11	25
Cardox and Airdox	2	136	1.56	106.36	1.71	116.28	902	179	161,035	1,278,713	1,169,615	.91	6
Airdox	31	1,498	1.18	56.94	.79	37.95	18,914	176	3,332,656	26,307,918	39,471,320	1.50	97
None used	1	37	1.07	39.46	.86	31.85	726	164	119,148	937,630	1,161,869	1.24	48
Combination of 3							6	47	282	2,256	1,000	.44	1
Cardox and 2 others	2	95	1.30	61.65	1.51	71.62	898	218	195,807	1,540,872	1,326,449	.86	4
Not stated	42	1,606	1.32	50.55	1.82	69.71	29,277	136	3,988,019	31,770,330	23,037,434	.73	3,046
Surface[2]	1	85	.21	17.67			2,862	225	643,293	4,810,759			
Total	318	13,564	1.07	45.59	1.09	46.69	216,429	174	37,678,314	297,526,186	290,521,320	.98	6,270

[1] High explosives other than permissibles.

[2] Data on 51 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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TABLE 84.—*Injury experience, employment, and production data on Pennsylvania anthracite mines (underground and surface works), by type of explosive used, 1953*

Type of explosive	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Black blasting powder	1	85	1.24	105.80	4.26	362.16	480	239	114,510	803,418	234,703	0.29	5
Permissibles	21	1,069	1.15	58.60	3.40	173.17	14,953	167	2,503,398	18,243,646	6,173,054	.34	155
Other high explosives[1]	2	125	1.01	63.23	3.85	240.43	1,538	160	246,301	1,976,960	519,902	.26	12
Black blasting powder and permissibles	1	148	.85	125.96	2.44	360.92	716	234	167,297	1,174,963	410,062	.35	6
Permissibles and other high explosives	27	1,782	1.08	71.03	3.26	215.42	21,841	155	3,389,146	25,086,636	8,272,205	.33	87
Combination of 3	1	166	.28	46.69	1.00	165.45	2,541	170	431,502	3,555,585	1,003,319	.28	10
Not stated	10	308	2.74	84.26	7.04	216.87	2,863	173	495,615	3,655,378	1,420,178	.39	68
Surface[2]	1	152	.18	27.44	-------	-------	4,191	180	754,058	5,538,507	-------	-------	-------
Total	64	3,835	1.07	63.88	3.55	212.66	49,123	165	8,101,827	60,035,093	18,033,423	.30	343

[1] High explosives other than permissibles.

[2] Data on 93 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

TABLE 85.—*Injury experience, employment, and production data on Pennsylvania anthracite mines (underground and surface works), by type of explosive used, 1954*

Type of explosive	Number of injuries		Frequency rates				Men at work	Days active	Man-days worked	Man-hours worked	Production, short tons	Ton per man-hour	Number of mines
	Fatal	Non-fatal	Per million man-hours		Per million tons								
			Fatal	Non-fatal	Fatal	Non-fatal							
Black blasting powder	-------	5	-------	41.30	-------	80.12	136	129	17,528	121,064	62,403	0.52	3
Permissibles	17	781	1.40	64.22	3.29	151.01	12,231	139	1,704,895	12,161,068	5,171,765	.43	168
Other high explosives[1]	1	153	.58	88.39	1.69	257.85	1,354	162	219,167	1,731,007	593,370	.34	10
Black blasting powder and permissibles	3	75	5.40	134.99	14.43	360.84	518	153	79,399	555,582	207,847	.37	4
Permissibles and other high explosives	22	1,392	1.14	71.99	2.79	176.39	14,514	180	2,610,441	19,335,327	7,891,703	.41	67
Combination of 3	3	124	1.20	49.73	3.82	157.71	1,702	184	312,573	2,493,287	786,231	.32	6
Not stated	8	128	3.38	54.15	10.21	163.42	2,106	143	300,236	2,363,698	783,242	.33	31
Surface[2]	2	138	.43	29.54	-------	-------	3,638	175	637,789	4,670,969	-------	-------	-------
Total	56	2,796	1.29	64.38	3.61	180.43	36,199	162	5,882,028	43,432,002	15,496,561	.36	289

[1] High explosives other than permissibles.

[2] Data on 80 surface installations (preparation plants and general repair shops) that could not be assigned to any single underground mine.

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INJURY EXPERIENCE, BY STATES, 1953–54

TABLE 86.—*Relative standing of States according to fatal- and nonfatal-injury rates per million man-hours of exposure, 1953*

State	Fatality rate	State	Nonfatal injury rate
Arizona	----	Arizona	----
Arkansas	----	Oregon	----
California	----	California	----
Georgia	----	Wyoming	13.21
Kansas	----	Alabama	16.18
Missouri	----	Missouri	28.60
North Dakota	----	Pennsylvania (bituminous)	30.68
Oregon	----	Georgia	31.01
South Dakota	----	Kansas	33.65
Wyoming	0.50	Ohio	34.62
Pennsylvania (bituminous)	.66	New Mexico	35.86
Colorado	.67	North Dakota	43.92
Ohio	.75	Kentucky	44.10
Alabama	.77	Tennessee	44.44
Oklahoma	.85		
West Virginia	.88	United States bituminous	45.26
United States bituminous	.89	South Dakota	46.96
United States average	.90	United States average	47.23
Pennsylvania (anthracite)	.92	Iowa	48.12
Kentucky	.98	Maryland	49.15
Indiana	.98	Colorado	50.82
Illinois	1.08	Illinois	52.63
Tennessee	1.27	Virginia	53.21
Montana	1.41	Montana	53.52
Virginia	1.46	Utah	53.90
Utah	1.46	West Virginia	57.78
Washington	1.73	Pennsylvania (anthracite)	59.85
Maryland	2.18	Indiana	60.59
Alaska	2.19	Oklahoma	66.65
New Mexico	2.56	Arkansas	73.48
Iowa	4.66	Washington	128.02
		Alaska	175.33

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TABLE 87.—*Relative standing of States according to fatal- and nonfatal-injury rates per million man-hours of exposure, 1954*

State	Fatality rate
Oklahoma	----
Wyoming	----
Iowa	----
Arkansas	----
North Dakota	----
Maryland	----
Kansas	----
New Mexico	----
Georgia	----
South Dakota	----
Arizona	----
Oregon	----
California	----
Ohio	0.32
Missouri	.64
Pennsylvania (bituminous)	.68
Tennessee	.70
Alabama	.78
Colorado	.86
United States bituminous	.99
Illinois	.99
United States average	1.02
Kentucky	1.08
Washington	1.10
Indiana	1.21
Pennsylvania (anthracite)	1.23
West Virginia	1.31
Virginia	1.41
Alaska	1.49
Utah	1.60
Montana	1.66

State	Nonfatal injury rate
South Dakota	----
Arizona	----
Oregon	----
California	----
Alabama	14.90
Missouri	17.26
Kansas	19.44
Wyoming	20.13
New Mexico	25.11
Pennsylvania (bituminous)	26.48
Ohio	34.85
Tennessee	36.74
Utah	40.58
Iowa	41.05
Colorado	42.22
North Dakota	42.24
United States bituminous	43.66
Georgia	43.86
Kentucky	44.33
United States average	45.67
Virginia	50.07
Maryland	50.15
Illinois	53.01
Indiana	55.08
West Virginia	57.88
Pennsylvania (anthracite)	59.18
Montana	66.42
Arkansas	70.38
Oklahoma	70.63
Washington	96.67
Alaska	113.00

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TABLE 88.—*Injury experience, employment, and production data on coal mines in the United States, by States and general location, 1953*

State	Number of mines			Men working					Days active	Man-days of work				
				Underground mines						Underground mines				
	Underground	Strip	Total	Underground	Surface[1]	Total	Strip mines	Total		Underground	Surface[1]	Total	Strip mines	Total
Alabama	453	32	485	8,127	1,953	10,080	756	10,836	197	1,614,119	384,100	1,998,219	141,807	2,140,026
Alaska	4	5	9	238	80	318	103	421	264	64,588	19,739	84,327	26,849	111,176
Arizona	2		2	13	4	17		17	193	2,500	773	3,273		3,273
Arkansas	55	14	69	927	177	1,104	157	1,261	115	95,699	17,297	112,996	31,732	144,728
California		1	1				1	1	100				100	100
Colorado	162	7	169	2,325	603	2,928	102	3,030	188	438,995	113,187	552,182	18,889	571,071
Georgia	6		6	35	7	42		42	96	3,353	668	4,021		4,021
Illinois	165	72	237	11,935	3,994	15,929	3,356	19,285	179	1,993,297	695,895	2,689,192	766,801	3,455,993
Indiana	46	46	92	2,854	881	3,735	2,378	6,113	166	523,490	174,069	697,559	501,992	1,199,551
Iowa	53	38	91	550	79	629	305	934	173	90,193	12,699	102,892	58,585	161,477
Kansas	10	28	38	94	19	110	496	606	156	9,456	1,960	11,416	107,565	118,981
Kentucky	1,973	142	2,115	36,120	8,094	44,514	2,770	47,284	170	6,224,915	1,376,991	7,601,906	431,751	8,033,657
Maryland	137	38	175	470	84	554	220	774	149	75,949	14,280	90,229	25,160	115,389
Missouri	39	46	85	422	95	517	789	1,306	169	49,604	12,043	61,734	159,288	221,022
Montana	33	9	42	341	159	500	98	598	151	49,720	23,332	73,052	17,500	90,552
New Mexico	28	1	29	435	82	517	3	520	191	83,255	15,535	98,790	473	99,263
North Dakota	14	61	75	51	30	81	421	502	208	9,028	7,162	16,190	88,289	104,479
Ohio	377	299	676	6,647	1,950	8,597	4,960	13,557	211	1,323,583	410,564	1,733,947	1,145,127	2,879,074
Oklahoma	38	30	68	855	170	1,025	523	1,548	191	161,842	34,176	199,018	96,106	295,124
Oregon	2		2	5	5	10		10	146	731	731	1,462		1,462
Pennsylvania (bituminous)	929	645	1,574	50,091	10,345	60,436	7,344	67,780	206	10,428,396	2,088,170	12,516,566	1,480,519	13,997,085
South Dakota	1	2	3	2		2	13	15	177	20		20	2,642	2,662
Tennessee	835	60	895	5,880	1,304	7,184	582	7,766	127	768,317	168,393	936,740	52,209	988,949
Utah	59		59	2,822	1,005	3,827		3,827	228	644,841	225,988	870,829		870,829
Virginia	356	31	387	12,598	2,162	15,060	622	15,682	176	2,219,537	429,133	2,648,670	107,969	2,756,639
Washington	17	4	21	527	206	733	32	765	191	101,955	40,014	141,969	6,803	148,772
West Virginia	953	208	1,161	69,707	15,464	85,171	3,267	88,378	195	13,637,970	3,092,339	16,730,309	534,730	17,265,039
Wyoming	36	10	46	1,792	496	2,288	278	2,566	200	360,711	95,081	455,792	57,959	513,751
Total bituminous	6,783	1,827	8,610	216,161	49,748	265,909	29,516	295,425	191	40,979,221	9,454,119	50,433,340	5,860,834	56,294,174
Pennsylvania (anthracite)[2]	343	159	502	34,377	15,531	49,908	5,753	55,701	169	5,608,416	2,638,498	8,246,914	1,146,810	9,393,724
Grand total[2]	7,126	1,986	9,112	250,538	65,279	315,817	35,309	351,126	187	46,587,637	12,092,617	58,680,254	7,007,644	65,687,898

State	Man-hours of work					Production, short tons			Tons per man-hour		
	Underground mines										
	Underground	Surface[1]	Total	Strip mines	Total	Underground mines[1]	Strip mines	Total	Underground mines[1]	Strip mines	Total
Alabama	12,916,679	2,848,534	15,765,213	1,109,366	16,871,579	11,085,725	1,668,775	12,754,500	0.70	1.50	0.76
Alaska	520,596	159,339	679,935	232,622	912,557	419,842	452,949	872,791	.62	1.95	.96
Arizona	20,000	6,184	26,184		26,184	6,703		6,703	.26		.26
Arkansas	769,466	134,499	903,965	252,742	1,156,707	397,511	371,954	769,465	.44	1.47	.67
California				800	800		2,360	2,360		2.99	2.99
Colorado	3,501,212	845,378	4,346,590	139,400	4,485,990	3,228,769	365,509	3,594,278	.74	2.62	.80
Georgia	26,902	5,344	32,246		32,246	14,100		14,100	.41		.44
Illinois	15,843,864	5,164,328	21,008,202	5,821,960	26,830,162	29,753,064	16,626,529	46,379,593	1.42	2.86	1.73
Indiana	4,134,451	1,278,662	5,413,113	3,730,695	9,143,808	6,206,409	9,798,072	16,004,481	1.15	2.63	1.75
Iowa	702,228	97,641	799,869	488,592	1,288,461	418,521	953,345	1,372,866	.52	1.95	1.07
Kansas	73,196	15,013	88,209	803,293	891,502	31,069	1,187,507	1,218,576	.35	1.48	1.37
Kentucky	49,762,715	10,365,396	60,128,105	3,346,412	63,474,517	53,888,855	10,274,389	64,163,244	.90	3.07	1.01
Maryland	599,558	111,874	711,432	204,138	915,570	321,832	235,017	559,849	.46	1.15	.61
Missouri	391,339	94,733	486,072	1,227,134	1,713,206	153,478	2,755,598	2,909,576	.32	2.25	1.70
Montana	396,100	174,751	570,851	139,117	709,968	473,901	1,428,693	1,902,594	.83	10.27	2.68
New Mexico	656,049	121,068	777,117	3,781	780,898	511,986	6,677	518,663	.66	1.77	.66
North Dakota	76,543	58,967	135,512	684,103	819,615	49,725	2,734,828	2,784,553	.37	4.00	3.40
Ohio	10,487,538	3,065,991	13,553,529	9,148,827	22,702,356	12,852,669	21,415,770	34,267,873	.95	2.34	1.51
Oklahoma	1,318,120	252,908	1,571,028	769,529	2,340,557	871,195	1,311,814	2,183,009	.55	1.70	.93
Oregon	4,850	4,850	9,700		9,700	1,564		1,564	.16		.16
Pennsylvania (bituminous)	83,607,781	15,463,252	99,071,033	12,033,518	111,104,581	73,116,347	20,433,277	93,549,624	.74	1.70	.84
South Dakota	100		100	21,136	21,236	8	21,799	21,807	.05	1.03	1.02
Tennessee	6,142,771	1,320,754	7,463,525	411,515	7,875,040	4,936,692	702,531	5,639,133	.66	1.71	.72
Utah	5,159,160	1,686,562	6,845,722		6,845,722	6,543,250		6,543,250	.96		.96
Virginia	17,733,038	3,258,230	21,011,277	845,381	21,856,658	16,925,015	1,807,214	18,732,227	.81	2.14	.88
Washington	815,669	290,120	1,105,789	50,281	1,156,073	597,696	90,996	688,692	.54	1.81	.60
West Virginia	109,233,109	22,747,351	131,980,520	4,358,101	136,338,927	122,941,280	10,235,911	133,177,191	.93	2.35	.98
Wyoming	2,883,677	698,372	3,582,049	429,126	4,011,175	3,513,957	1,708,910	5,252,867	.99	3.98	1.31
Total bituminous	327,796,823	70,270,114	398,066,937	46,251,902	444,318,839	349,294,003	106,541,460	455,885,461	.88	2.30	1.03
Pennsylvania (anthracite)	41,445,701	19,675,048	61,120,749	8,153,950	69,274,699	20,581,001	9,937,358	30,518,359	.34	1.22	.44
Grand total	369,242,524	89,945,162	459,187,686	54,405,852	513,593,538	369,875,002	116,528,818	486,403,820	.81	2.14	.93

[1] Includes breakers, shops, yards, washeries, and dredges at Pennsylvania anthracite mines.

[2] Number of mines does not include 36 washeries, 11 dredges, and 93 surface installations (preparation plants and general repair shops).

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TABLE 89.—*Injury experience, employment, and production data on coal mines in the United States, by States and general location, 1954*

State	Number of mines			Men working					Days active	Man-days of work				
				Underground mines			Strip mines	Total		Underground mines			Strip mines	Total
	Underground	Strip	Total	Underground	Surface[1]	Total				Underground	Surface[1]	Total		
Alabama	334	37	371	7,054	1,750	8,804	729	9,533	187	1,325,451	329,614	1,655,065	125,841	1,780,906
Alaska	5	4	9	178	84	262	74	336	250	43,241	19,293	62,534	21,390	83,924
Arizona	1		1	8	2	10		10	184	1,172	368	1,840		1,840
Arkansas	37	21	58	529	123	662	152	814	131	66,334	13,755	80,089	26,700	106,789
California		2	2				2	2	181				362	362
Colorado	152	9	161	2,157	558	2,715	97	2,812	158	342,806	87,593	430,489	13,160	443,649
Georgia	6		6	31	7	38		38	150	4,650	1,050	5,700		5,700
Illinois	142	70	212	10,450	3,510	13,960	3,173	17,133	166	1,608,504	548,887	2,157,391	689,729	2,847,120
Indiana	47	35	82	2,263	752	3,015	1,656	4,671	185	372,979	137,689	510,668	353,191	863,859
Iowa	40	35	75	433	61	494	287	781	167	64,166	9,119	73,285	57,179	130,464
Kansas	8	32	40	93	12	105	349	454	196	9,405	1,221	10,626	78,431	89,057
Kentucky	1,873	124	1,997	30,031	7,030	37,061	2,688	39,752	164	4,927,944	1,137,928	6,065,872	464,780	6,530,652
Maryland	129	28	157	413	93	506	119	625	137	55,928	13,443	69,371	16,167	85,538
Missouri	34	44	78	333	66	399	678	1,077	188	49,628	9,666	59,294	142,757	202,051
Montana	39	13	52	285	128	413	89	502	154	43,391	18,740	62,131	14,939	77,070
New Mexico	31	4	35	188	54	242	12	254	165	31,314	8,741	40,085	1,876	41,961
North Dakota	8	49	57	18	4	22	399	421	210	3,688	888	4,576	83,867	88,443
Ohio	366	282	648	5,598	1,762	7,360	4,435	11,795	200	999,556	328,847	1,328,403	1,025,384	2,353,787
Oklahoma	30	29	59	891	178	1,069	408	1,477	169	150,246	29,161	179,707	70,475	250,182
Oregon	2		2	4	3	7		7	141	606	383	989		989
Pennsylvania (bituminous)	791	565	1,356	40,461	8,816	49,277	6,363	55,640	174	6,920,868	1,515,308	8,436,176	1,237,226	9,673,402
South Dakota	1	2	3	1	1	2	9	11	245	80	80	160	2,530	2,690
Tennessee	678	56	734	4,897	1,133	6,030	665	6,695	161	782,501	177,704	960,205	115,827	1,076,032
Utah	56		56	2,102	809	2,911		2,911	192	398,654	160,428	559,082		559,082
Virginia	468	22	490	10,409	2,235	12,644	338	12,982	165	1,722,623	357,169	2,079,792	63,364	2,143,156
Washington	15	3	18	156	203	659	32	691	169	78,198	34,201	112,399	4,427	116,826
West Virginia	945	188	1,133	53,613	12,657	66,270	2,529	68,799	189	10,130,151	2,434,248	12,564,399	427,963	12,992,362
Wyoming	32	10	42	1,089	400	1,489	207	1,696	128	124,456	43,530	167,986	49,491	217,477
Total bituminous	6,270	1,664	7,934	173,998	42,431	216,429	25,490	241,919	177	30,258,960	7,419,354	37,678,314	5,087,056	42,765,370
Pennsylvania (anthracite)[2]	289	128	417	24,621	12,188	36,809	4,977	41,786	164	3,920,942	2,060,590	5,981,532	850,826	6,832,358
Grand total[3]	6,559	1,792	8,351	198,619	54,619	253,238	30,467	283,705	175	34,179,902	9,479,944	43,659,846	5,937,882	49,597,728

State	Man-hours of work					Production, short tons			Tons per man-hour		
	Underground mines			Strip mines	Total	Underground mines[1]	Strip mines	Total	Underground mines[1]	Strip mines	Total
	Underground	Surface[1]	Total								
Alabama	10,591,870	2,458,027	13,049,897	973,468	14,023,365	9,031,992	1,562,129	10,594,121	0.69	1.60	0.76
Alaska	346,522	148,294	494,816	177,779	672,595	284,771	378,110	662,881	.58	2.13	.99
Arizona	11,776	2,944	14,720		14,720	6,625		6,625	.45		.45
Arkansas	532,394	107,285	639,679	212,845	852,524	282,518	257,754	540,272	.44	1.21	.63
California				2,896	2,896		4,427	4,427		1.53	1.53
Colorado	2,733,595	649,410	3,383,005	98,638	3,481,643	2,614,650	299,260	2,913,910	.77	3.03	.84
Georgia	37,200	8,400	45,600		45,600	22,500		22,500	.49		.49
Illinois	12,787,098	4,076,852	16,863,950	5,247,073	22,111,003	26,583,441	16,434,696	43,018,137	1.58	3.13	1.95
Indiana	2,952,307	1,018,062	3,970,369	2,620,642	6,591,011	4,872,478	8,197,435	13,069,913	1.23	3.13	1.98
Iowa	498,790	70,179	568,969	478,479	1,047,448	331,828	839,885	1,171,713	.58	1.76	1.12
Kansas	71,309	9,239	80,548	588,232	668,780	24,934	1,170,529	1,195,463	.31	1.99	1.79
Kentucky	39,339,352	8,703,399	48,042,751	3,595,999	51,638,750	47,484,548	11,732,433	59,216,981	.99	3.26	1.15
Maryland	443,306	105,979	549,285	128,676	677,961	230,022	202,942	432,964	.42	1.58	.64
Missouri	389,943	76,128	466,071	1,098,598	1,564,669	160,864	2,841,464	3,002,328	.35	2.59	1.92
Montana	344,338	139,535	483,873	118,382	602,255	432,619	1,097,596	1,530,215	.89	9.27	2.54
New Mexico	240,398	63,196	303,594	15,005	318,599	189,680	29,580	219,260	.62	1.97	.69
North Dakota	29,500	6,799	36,299	650,258	686,557	23,339	2,820,424	2,843,763	.64	4.34	4.14
Ohio	7,912,864	2,457,474	10,370,338	8,160,986	18,531,324	10,773,427	22,029,267	32,802,694	1.04	2.70	1.77
Oklahoma	1,201,234	218,223	1,419,457	562,801	1,982,258	788,198	1,088,239	1,876,437	.56	1.93	.95
Oregon	4,852	3,060	7,912		7,912	1,249		1,249	.16		.16
Pennsylvania (bituminous)	55,523,335	11,273,605	66,796,940	10,105,785	76,902,725	51,070,852	17,290,447	71,361,299	.81	1.71	.93
South Dakota	610	580	1,220	19,880	21,100	300	22,624	22,924	.25	1.14	1.09
Tennessee	6,246,777	1,399,508	7,646,285	926,380	8,572,665	5,172,293	1,702,354	6,874,647	.68	1.84	.80
Utah	3,191,557	1,191,674	4,386,231		4,386,231	4,987,876		4,987,876	1.14		1.14
Virginia	13,779,334	2,744,068	16,523,402	493,350	17,016,752	14,926,577	995,924	15,922,501	.90	2.02	.94
Washington	625,624	251,131	876,755	33,536	910,291	571,200	60,150	631,350	.65	1.79	.69
West Virginia	81,141,805	18,044,574	99,186,379	3,519,792	102,706,171	105,254,596	8,935,364	114,189,960	1.08	2.54	1.11
Wyoming	995,094	322,767	1,317,861	371,553	1,689,414	1,397,943	1,438,144	2,836,087	1.06	3.87	1.68
Total bituminous	241,975,814	55,550,372	297,526,186	40,201,033	337,727,219	290,521,320	101,131,177	391,952,497	.98	2.52	1.16
Pennsylvania (anthracite)	28,873,117	15,287,825	44,160,942	6,062,054	50,222,996	19,196,905	9,735,754	28,932,659	.43	1.61	.58
Grand total	270,848,931	70,838,197	341,687,128	46,263,087	387,950,215	309,718,225	111,166,931	420,885,156	.91	2.40	1.08

[1] Includes breakers, shops, yards, washeries, and dredges at Pennsylvania anthracite mines.

[2] Number of mines does not include 28 washeries, 6 dredges, and 80 surface installations (preparation plants and general repair shops).

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TABLE 90.—*Number of fatal injuries at coal mines in the United States, by States, general location, and principal accident agencies, 1953*

State	Underground																			
	Falls of roof	Roof falls due to cars or machines knocking out posts	Falls of face	Rushes, rolls, or slides	Other falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Mine fires	All other	Total underground
Alabama	7										2			1	1				11
Alaska	1																		1
Arizona																			
Arkansas																			
California																			
Colorado	2										1								3
Georgia																			
Illinois	15	1	1								6								23
Indiana	2									1	4								7
Iowa													5		1				6
Kansas																			
Kentucky	34		4								12			3	2				55
Maryland	1													1					2
Michigan																			
Missouri																			
Montana	1																		1
New Mexico	1														1				2
North Carolina																			
North Dakota																			
Ohio	6	1									1			1	1				10
Oklahoma	1																		1
Oregon																			
Pennsylvania (bituminous)	39	3	1				1				12		2	2	2				62
South Dakota																			
Tennessee	6										1								7
Utah	5										3			1					9
Virginia	25					1					3								29
Washington	1				1														2
West Virginia	68	3	3								28	4	2	2	2				112
Wyoming	1										1								2
Total bituminous	216	8	9		1	1	1			1	74	9	4	12	9				345
Pennsylvania (anthracite)	36		6	1		1	1				2	5	1	2		1		3	59
All coal	252	8	15	1	1	2	2			1	76	14	5	14	9	1		3	404

State	Shaft and slope																		Total underground (including shaft and slope)
	Falls of roof	Roof falls due to cars or machines knocking out posts	Falls of face	Rushes, rolls, or slides	Other falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Mine fires	All other	Total shaft and slope	
Alabama											1							1	1	12
Alaska											1								1	2
Arizona																				
Arkansas																				
California																				
Colorado																				3
Georgia																				
Illinois																				23
Indiana																				7
Iowa																				6
Kansas																				
Kentucky																				55
Maryland																				2
Michigan																				
Missouri																				
Montana																				1
New Mexico																				2
North Carolina																				
North Dakota																				
Ohio																				10
Oklahoma																				1
Oregon																				
Pennsylvania (bituminous)											1							1	63
South Dakota																				
Tennessee																				7
Utah																				9
Virginia																				29
Washington																				2
West Virginia											1							1	113
Wyoming																				2
Total bituminous											4							4	349
Pennsylvania (anthracite)						1												1	60
All coal						1					4							5	409

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TABLE 90.—*Number of fatal injuries at coal mines in the United States, by States, general location, and principal accident agencies, 1953*—Continued

State	Surface															
	Rushes, rolls, or slides	Falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Fires	All other	Total surface
Alabama																
Alaska																
Arizona																
Arkansas																
California																
Colorado																
Georgia																
Illinois		1						3							1	5
Indiana			1													1
Iowa																
Kansas																
Kentucky								3			1					4
Maryland																
Michigan																
Missouri																
Montana																
New Mexico																
North Carolina																
North Dakota																
Ohio											1	2				3
Oklahoma																
Oregon																
Pennsylvania (bituminous)								4				2				6
South Dakota																
Tennessee																
Utah								1								1
Virginia			1					1								2
Washington																
West Virginia		1		1				1			2					5
Wyoming																
Total bituminous		2	2	1				13			4	4			1	27
Pennsylvania (anthracite)			1	1				1				1				4
All coal		2	3	2				14			4	5			1	31

State	Strip																Washeries	Dredges	Total all mines
	Falls or slides of coal or overburden	Rushes, rolls, or slides	Other falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Fires	All other	Total strip			
Alabama	1																1			13
Alaska																				2
Arizona																				
Arkansas																				
California																				
Colorado																				3
Georgia																				
Illinois												1					1			29
Indiana													1				1			9
Iowa																				6
Kansas																				
Kentucky												1	2				3			62
Maryland																				2
Michigan																				
Missouri																				
Montana																				1
New Mexico																				2
North Carolina																				
North Dakota																				
Ohio											1		2		1		4			17
Oklahoma												1					1			2
Oregon																				
Pennsylvania (bituminous)	2								1				1				4			73
South Dakota																				
Tennessee	2				1												3			10
Utah																				10
Virginia													1				1			32
Washington																				2
West Virginia													2				2			120
Wyoming																				2
Total bituminous	5				1				1		1	3	9		1		21			397
Pennsylvania (anthracite)																				64
All coal	5				1				1		1	3	9		1		21			461

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TABLE 91.—*Number of fatal injuries at coal mines in the United States, by States, general location, and principal accident agencies, 1954*

State	Underground																			
	Falls of roof	Roof falls due to cars or machines knocking out posts	Falls of face	Rushes, rolls, or slides	Other falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Mine fires	All other	Total underground
Alabama	4										3		1	2					10
Alaska																			
Arizona																			
Arkansas																			
California																			
Colorado	3																		3
Georgia																			
Illinois	5		3								5				1				14
Indiana	4										2		1						7
Iowa																			
Kansas																			
Kentucky	32	2	2								6			4	5				51
Maryland																			
Missouri																			
Montana			1																1
New Mexico																			
North Dakota																			
Ohio	3										1								4
Oklahoma																			
Oregon																			
Pennsylvania (bituminous)	21	1									15	1			3		1		42
South Dakota																			
Tennessee	4													1					5
Utah	2		3								1								6
Virginia	15		1								7								22
Washington																			1
West Virginia	65	2	4								22	16	3	4	5				121
Wyoming																			
Total bituminous	158	5	14								62	17	5	11	14		1		287
Pennsylvania (anthracite)	30		6	3		2					6	1		1					49
All coal	188	5	20	3		2					68	18	5	12	14		1		336

State	Shaft and slope																			Total underground (including shaft and slope)
	Falls of roof	Roof falls due to cars or machines knocking out posts	Falls of face	Rushes, rolls, or slides	Other falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Mine fires	All other	Total shaft and slope	
Alabama																				10
Alaska																				
Arizona																				
Arkansas																				
California																				
Colorado																				3
Georgia																				
Illinois											4								4	18
Indiana																				7
Iowa																				
Kansas																				
Kentucky																				51
Maryland																				
Missouri																				
Montana																				1
New Mexico																				
North Dakota																				
Ohio																				4
Oklahoma																				
Oregon																				
Pennsylvania (bituminous)																				42
South Dakota																				
Tennessee																				5
Utah																				6
Virginia																				22
Washington																				1
West Virginia																				121
Wyoming																				
Total bituminous											4								4	291
Pennsylvania (anthracite)											2								2	51
All coal											6								6	342

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TABLE 91.—*Number of fatal injuries at coal mines in the United States, by States, general location, and principal accident agencies, 1954*—Continued

State	Surface															
	Rushes, rolls, or slides	Falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Fires	All other	Total surface
Alabama								1								1
Alaska																
Arizona																
Arkansas																
California																
Colorado																
Georgia																
Illinois								1								1
Indiana																
Iowa																
Kansas																
Kentucky			1	1				2							1	5
Maryland																
Missouri																
Montana																
New Mexico																
North Dakota																
Ohio												1				1
Oklahoma																
Oregon																
Pennsylvania (bituminous)			1					1	3						1	6
South Dakota																
Tennessee								1								1
Utah								1								1
Virginia			1					1								2
Washington																
West Virginia			1					4	2		1	1				9
Wyoming																
Total bituminous			4	1				12	5		1	2			2	27
Pennsylvania (anthracite)			2					1						1	1	5
All coal			6	1				13	5		1	2		1	3	32

State	Strip																	Washeries	Dredges	Total all mines
	Falls or slides of coal or overburden	Rushes, rolls, or slides	Other falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Fires	All other	Total strip			
Alabama																				11
Alaska	1																1			1
Arizona																				
Arkansas																				
California																				
Colorado																				3
Georgia																				
Illinois											2		1				3			22
Indiana													1				1			8
Iowa																				
Kansas																				
Kentucky																				56
Maryland																				
Missouri												1					1			1
Montana																				1
New Mexico																				
North Dakota																				
Ohio													1				1			6
Oklahoma																				
Oregon																				
Pennsylvania (bituminous)	1											1	1		1		4			52
South Dakota																				
Tennessee																				6
Utah																				7
Virginia																				24
Washington																				1
West Virginia	1		1						2			1					5			135
Wyoming																				
Total bituminous	3		1						2		2	3	4		1		16			334
Pennsylvania (anthracite)				1					3				2				6			62
All coal	3		1	1					5		2	3	6		1		22			396

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TABLE 92.—*Number of nonfatal injuries at coal mines in the United States, by States, general location, and principal accident agencies, 1953*

State	Underground																		
	Falls of roof	Roof falls due to cars or machines knocking out posts	Falls of face	Rushes, rolls, or slides	Other falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Mine fires	All other	Total underground
Alabama	44	.....	11	.....	7	3	33	9	.....	3	62	.....	2	9	30	.....	.....	1	214
Alaska	10	.....	8	9	5	17	36	8	1	.....	7	.....	1	.....	8	.....	.....	2	112
Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arkansas	12	.....	4	.....	.....	.....	16	8	1	.....	26	.....	1	.....	1	.....	.....	1	70
California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colorado	35	1	27	.....	6	5	36	9	1	.....	48	.....	2	.....	28	.....	.....	1	199
Georgia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1
Illinois	175	8	53	.....	30	52	197	54	26	2	233	1	34	57	164	.....	2	11	1,099
Indiana	44	3	20	.....	9	19	70	19	5	4	77	.....	10	24	78	1	.....	6	389
Iowa	4	.....	2	1	.....	1	14	3	.....	.....	17	.....	.....	.....	4	.....	.....	.....	46
Kansas	1	.....	.....	.....	.....	.....	1	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	4
Kentucky	424	8	94	.....	56	61	435	126	24	15	590	1	28	86	410	.....	1	35	2,394
Maryland	6	.....	1	.....	.....	.....	2	1	.....	.....	17	.....	.....	1	.....	.....	.....	.....	28
Michigan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Missouri	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	.....	.....	.....	1	.....	.....	.....	7
Montana	1	.....	3	.....	1	4	7	2	.....	.....	4	.....	.....	.....	3	.....	.....	.....	25
New Mexico	4	.....	4	.....	2	1	1	1	.....	2	4	.....	.....	2	5	.....	.....	.....	26
North Carolina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Dakota	.....	.....	.....	.....	.....	2	1	.....	.....	.....	3	.....	.....	.....	2	.....	.....	2	10
Ohio	72	5	23	1	13	31	107	27	7	.....	108	.....	16	12	89	.....	1	5	517
Oklahoma	21	1	5	.....	6	5	39	4	4	.....	26	.....	.....	1	22	.....	.....	4	138
Oregon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pennsylvania (bituminous)	470	18	138	7	45	133	574	176	56	14	694	2	17	58	410	1	1	19	2,833
South Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee	54	1	11	.....	8	8	60	36	.....	4	81	.....	3	9	31	.....	.....	5	311
Utah	51	2	58	3	6	12	51	11	4	1	47	.....	2	5	65	.....	1	9	328
Virginia	224	7	45	1	27	28	259	63	4	8	216	.....	3	26	118	.....	.....	16	1,045
Washington	33	.....	8	6	1	11	36	11	.....	.....	11	.....	.....	1	8	.....	.....	3	129
West Virginia	1,157	37	366	11	138	159	1,405	350	93	24	1,523	6	83	260	1,181	11	11	64	6,879
Wyoming	3	.....	6	.....	1	6	2	.....	.....	.....	14	.....	.....	.....	6	.....	.....	.....	38
Total bituminous	2,845	91	887	39	361	558	3,382	918	226	77	3,817	10	202	551	2,664	13	17	184	16,842
Pennsylvania (anthracite)	340	.....	291	100	75	449	981	276	79	15	406	15	20	23	190	2	.....	38	3,300
All coal	3,185	91	1,178	139	436	1,007	4,363	1,194	305	92	4,223	25	222	574	2,854	15	17	222	20,142

State	Shaft and slope																		
	Falls of roof	Roof falls due to cars or machines knocking out posts	Falls of face	Rushes, rolls, or slides	Other falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Mine fires	All other	Total shaft and slope	Total underground (including shaft and slope)
Alabama	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	3	217
Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	3	115
Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arkansas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70
California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colorado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	2	201
Georgia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Illinois	.....	.....	.....	.....	1	3	1	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	9	1,108
Indiana	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	4	393
Iowa	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	48
Kansas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
Kentucky	.....	.....	.....	.....	.....	6	.....	1	.....	.....	2	.....	.....	.....	1	.....	.....	.....	10	2,404
Maryland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28
Michigan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Missouri	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Montana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
North Carolina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10
Ohio	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	519
Oklahoma	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	138
Oregon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pennsylvania (bituminous)	.....	.....	.....	.....	1	4	2	.....	.....	.....	8	.....	.....	1	.....	.....	.....	.....	16	2,849
South Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	311
Utah	.....	.....	.....	.....	.....	2	1	.....	1	.....	1	.....	.....	.....	1	.....	.....	.....	6	334
Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	1,046
Washington	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	129
West Virginia	.....	.....	.....	.....	.....	3	3	.....	.....	.....	3	.....	.....	.....	1	.....	.....	.....	10	6,889
Wyoming	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	39
Total bituminous	.....	.....	.....	.....	2	21	9	.....	2	.....	31	.....	.....	1	3	.....	.....	.....	69	16,911
Pennsylvania (anthracite)	.....	.....	.....	1	8	13	9	1	3	.....	31	.....	.....	1	.....	.....	.....	.....	67	3,367
All coal	.....	.....	.....	1	10	34	18	1	5	.....	62	.....	.....	2	3	.....	.....	.....	136	20,278

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TABLE 92.—*Number of nonfatal injuries at coal mines in the United States, by States, general location, and principal accident agencies, 1953*—Continued

State	Surface															
	Rushes, rolls, or slides	Falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Fires	All other	Total surface
Alabama		2	4	8	2	1		3				8			1	29
Alaska			1	4	2			4				3			6	20
Arizona																
Arkansas			2	2	1			1								6
California																
Colorado			6	3	3			7			2	3			1	25
Georgia																
Illinois		5	31	46	12	1	3	38		1	3	15			12	167
Indiana		2	5	9		1		10				3			10	40
Iowa			1			1										2
Kansas																
Kentucky	1	6	40	79	17	3		95	1		10	19		2	14	287
Maryland			1					1								2
Michigan																
Missouri																
Montana					1	1		1				1			1	5
New Mexico			1	1												2
North Carolina																
North Dakota					1			1								2
Ohio		4	15	21	7	1	1	14			1	6			4	74
Oklahoma			1	2		1										4
Oregon																
Pennsylvania (bituminous)		6	35	53	20	2	2	83			2	22		1	7	233
South Dakota																
Tennessee			4	11	3			6			1	1				26
Utah		1	5	9	6	2		8			1	2			1	35
Virginia		2	15	29	6	1		22	1		1	11			3	91
Washington		1	1	2	5	1		4				3				17
West Virginia		21	84	228	65	18	3	245	1		28	67		2	42	804
Wyoming			2	1				1				1				5
Total bituminous	1	50	254	508	151	34	9	544	3	1	49	165		5	102	1,876
Pennsylvania (anthracite)		22	81	150	24	11	3	106			4	31	1		35	468
All coal	1	72	335	658	175	45	12	650	3	1	53	196	1	5	137	2,344

State	Strip																Washeries	Dredges	Total all mines
	Falls or slides of coal or overburden	Rushes, rolls, or slides	Other falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Fires	All other	Total strip			
Alabama			1	5	8	2			4				6			1	27			273
Alaska	3		2	3	5	2	2		2		1		4		1		25			160
Arizona																				
Arkansas			1	2		1					1		4				9			85
California																				
Colorado					1				1								2			228
Georgia																				1
Illinois	5		2	21	38	11	7	1	18			2	23			9	137			1,412
Indiana	5		5	21	32	5	5		19		3		17	1	2	6	121			554
Iowa			1	1	3		1		3		1		1		1		12			62
Kansas	1	1	1	2	5	2	1		5		1		6			1	26			30
Kentucky	1		2	22	22	9	3	2	23				18		2	4	108			2,799
Maryland			1	4	6	1							1			2	15			45
Michigan																				
Missouri	1		2	8	7	1			6		5		7			5	42			49
Montana				5	1				1							1	8			38
New Mexico																				28
North Carolina																				
North Dakota	1		1	8	4	3	1		3				2			1	24			36
Ohio	4		5	36	39	13	1		25		1	3	48		1	17	193			786
Oklahoma				3	2				3				5			1	14			156
Oregon																				
Pennsylvania (bituminous)	9	1	11	49	64	25	5		37		1	1	98	1	4	21	327			3,409
South Dakota															1		1			1
Tennessee			1	6	3	1		1	1								13			350
Utah																				369
Virginia			1	4	7	3			4				6			1	26			1,163
Washington												1				1	2			118
West Virginia	12		8	25	39	13	4		15		2	2	49		5	10	184			7,877
Wyoming					2				1				4			2	9			53
Total bituminous	42	2	45	225	288	92	30	4	171		16	9	299	2	17	83	1,325			20,112
Pennsylvania (anthracite)	7	1	8	52	57	14	4	1	57		4	1	63	1	1	8	279	24	8	4,146
All coal	49	3	53	277	345	106	34	5	228		20	10	362	3	18	91	1,604	24	8	24,258

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TABLE 93.—*Number of nonfatal injuries at coal mines in the United States, by States, general location, and principal accident agencies, 1954*

State	Underground																		
	Falls of roof	Roof falls due to cars or machines knocking out posts	Falls of face	Rushes, rolls, or slides	Other falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Mine fires	All other	Total underground
Alabama	25	3	7	1	6	4	16	6	.....	1	62	.....	.....	3	21	.....	.....	1	156
Alaska	2	.....	4	4	1	4	9	4	.....	.....	1	.....	.....	.....	3	.....	.....	2	34
Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arkansas	9	.....	.....	.....	2	2	15	5	.....	.....	12	.....	.....	.....	3	.....	.....	1	49
California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colorado	13	1	19	.....	1	4	19	10	2	.....	20	4	3	.....	21	.....	.....	2	119
Georgia	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	2
Illinois	176	1	43	1	18	25	113	37	19	4	188	.....	39	36	131	.....	1	10	872
Indiana	36	1	9	.....	8	10	40	14	3	4	53	5	8	20	39	1	1	.....	252
Iowa	8	.....	1	.....	.....	.....	3	4	.....	.....	8	.....	.....	.....	2	.....	.....	.....	26
Kansas	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	3
Kentucky	351	12	91	2	51	50	363	99	20	11	520	1	31	62	314	3	1	26	2,008
Maryland	2	.....	.....	.....	.....	1	2	.....	.....	.....	13	.....	.....	.....	.....	.....	.....	.....	18
Missouri	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	6
Montana	1	.....	2	.....	1	1	7	2	.....	.....	4	.....	2	2	7	.....	.....	.....	29
New Mexico	2	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	1	.....	1	.....	.....	.....	6
North Dakota	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	3
Ohio	63	1	16	.....	3	18	78	8	6	3	94	.....	6	12	64	.....	.....	3	375
Oklahoma	13	.....	8	.....	4	3	26	5	6	4	23	.....	1	1	24	.....	.....	5	123
Oregon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pennsylvania (bituminous)	239	5	58	3	23	75	264	89	43	7	419	.....	22	41	253	.....	1	17	1,559
South Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee	50	1	9	.....	4	8	48	22	3	3	81	.....	1	2	29	.....	.....	7	268
Utah	13	1	28	.....	6	7	21	5	3	.....	27	.....	2	5	24	.....	.....	1	143
Virginia	158	3	31	.....	19	21	132	48	11	5	204	.....	4	23	98	.....	.....	12	769
Washington	17	.....	5	.....	2	8	19	9	2	.....	7	2	.....	.....	8	.....	.....	1	80
West Virginia	850	29	283	3	96	118	1,034	248	65	14	1,066	10	67	199	967	2	8	53	5,112
Wyoming	2	.....	6	.....	.....	.....	4	.....	.....	.....	9	.....	.....	.....	6	.....	.....	1	28
Total bituminous	2,031	58	620	14	245	359	2,245	617	183	56	2,819	22	187	406	2,017	6	12	143	12,040
Pennsylvania (anthracite)	196	.....	236	106	63	311	734	191	71	4	288	14	22	20	129	3	.....	19	2,407
All coal	2,227	58	856	120	308	670	2,979	808	254	60	3,107	36	209	426	2,146	9	12	162	14,447

State	Shaft and slope																		Total underground (including shaft and slope)
	Falls of roof	Roof falls due to cars or machines knocking out posts	Falls of face	Rushes, rolls, or slides	Other falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Mine fires	All other	Total shaft and slope	
Alabama	4	.....	.....	.....	1	1	1	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	9	165
Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	35
Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arkansas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	50
California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colorado	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	3	122
Georgia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Illinois	.....	.....	.....	.....	1	1	.....	.....	.....	.....	12	.....	.....	.....	.....	.....	.....	.....	14	886
Indiana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	253
Iowa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
Kansas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
Kentucky	.....	.....	.....	.....	.....	1	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	3	2,011
Maryland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18
Missouri	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
Montana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	30
New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
North Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
Ohio	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	376
Oklahoma	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	123
Oregon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pennsylvania (bituminous)	.....	.....	1	.....	1	3	.....	.....	.....	.....	3	.....	.....	1	2	.....	.....	.....	11	1,570
South Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	269
Utah	.....	.....	.....	.....	.....	1	.....	1	.....	.....	3	.....	.....	.....	1	.....	.....	.....	6	149
Virginia	.....	.....	.....	.....	.....	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	772
Washington	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	86
West Virginia	1	.....	.....	.....	.....	1	.....	1	.....	.....	11	.....	.....	1	.....	.....	.....	.....	15	5,127
Wyoming	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	29
Total bituminous	5	.....	1	.....	4	9	4	3	1	.....	38	.....	1	2	3	.....	.....	.....	71	12,111
Pennsylvania (anthracite)	.....	.....	.....	.....	11	9	3	1	.....	1	19	.....	.....	.....	.....	.....	.....	1	45	2,452
All coal	5	.....	1	.....	15	18	7	4	1	1	57	.....	1	2	3	.....	.....	1	116	14,563

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TABLE 93.—*Number of nonfatal injuries at coal mines in the United States, by States, general location, and principal accident agencies, 1954*—Continued

State	Surface															
	Rushes, rolls, or slides	Falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosions of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Fires	All other	Total surface
Alabama		1	3	5	1			8			1					19
Alaska			3	8	2			2				2				17
Arizona																
Arkansas			1	1				1				1				4
California																
Colorado		1	2	7	1	1		8			1	2				23
Georgia																
Illinois		1	13	35	4	3	1	26			1	12			13	109
Indiana		1	7	8	1		1	9	1			4			3	35
Iowa			2	1											2	5
Kansas																
Kentucky	1	5	29	68	16			53			7	17			2	198
Maryland			2	1				1							1	5
Missouri					1	1										2
Montana			1	1				1			1					4
New Mexico								2								2
North Dakota																
Ohio			9	7	5	1	1	15				4			4	46
Oklahoma			2	2		1									2	7
Oregon																
Pennsylvania (bituminous)		2	28	35	13	3		58	8		6	15		2	7	177
South Dakota																
Tennessee			5	7	2			10			1	2			2	29
Utah			2	10	2	2		9				4				29
Virginia		2	16	21	3	2		20				1			1	66
Washington			1	2				2							1	6
West Virginia	2	17	69	205	53	18	1	192	4		18	60		1	29	669
Wyoming								1								1
Total bituminous	3	30	195	424	104	32	4	418	13		36	124		3	67	1,453
Pennsylvania (anthracite)		8	68	129	23	7	1	56			2	36	1	2	11	344
All coal	3	38	263	553	127	39	5	474	13		38	160	1	5	78	1,797

State	Strip																Washeries	Dredges	Total all mines
	Falls or slides of coal or overburden	Rushes, rolls, or slides	Other falling materials or objects	Slips or falls of persons	Handling materials	Handtools	Stepping or kneeling on sharp or loose objects	Striking or bumping against objects	Haulage	Explosion of gas or coal dust	Explosives	Electricity	Machinery	Suffocation	Fires	All other	Total strip			
Alabama	1		3	6	7	2			3				2		1		25			209
Alaska	4		1	1	9	2	1		2				3			1	24			76
Arizona																				
Arkansas				1	3	1			1								6			60
California																				
Colorado									2								2			147
Georgia																				2
Illinois	2		4	28	57	7	8	1	25		6	1	27		1	10	177			1,172
Indiana	3		2	11	19	3	3		16		1		13			4	75			363
Iowa				2	1	1	1		3		1		3				12			43
Kansas			1	2	2	1			1		1		1			1	10			13
Kentucky		1	3	16	18	12			13				12			5	80			2,289
Maryland			1	3					2		1		3			1	11			34
Missouri	1		1	2	3	1			5			1	3			2	19			27
Montana				4		2											6			40
New Mexico																				8
North Dakota			1	6	5	2	1		8				3				26			29
Ohio	6		9	40	46	17	5		24			2	43		3	29	224			616
Oklahoma	1			3	1								5				10			140
Oregon																				
Pennsylvania (bituminous)		5	8	47	53	26	4		45		2	1	73		2	23	289			2,036
South Dakota																				
Tennessee	1		1	4	5	2			2				2				17			315
Utah																				178
Virginia	1			2	1				4				3		1	2	14			852
Washington									1				1				2			88
West Virginia	9	1	4	28	27	15	5	1	15		3	1	33		1	6	149			5,945
Wyoming					1	1	1		1								4			34
Total bituminous	29	7	39	206	258	95	29	2	173		15	6	230		9	84	1,182			14,746
Pennsylvania (anthracite)	5		10	27	38	7	3		25		2	2	33		3	5	160	11	5	2,972
All coal	34	7	49	233	296	102	32	2	198		17	8	263		12	89	1,342	11	5	17,718

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TABLE 94.—*Number of injuries, by percentage distribution, average severity, and injury rates at coal mines in the United States, by States and degree of injury, 1953*

State	Number of injuries						Distribution of all injuries percent[1]	Average severity[2]			Time-loss rates[3]				Frequency rates[4]			
	Fatal	Nonfatal			All injuries			Permanent partial	Temporary total	All injuries	Per thousand man-hours		Per thousand tons		Per million man-hours		Per million tons	
		Permanent		Temporary total	Total nonfatal						Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal
		Total	Partial															
Underground mines:																		
Underground (including shaft and slope):																		
Alabama	12		26	191	217	229	1.3	380.2	55.2	403.6	5.57	1.58	6.49	1.84	0.93	16.80	1.08	19.57
Alaska	2			115	115	117	.7		21.6	123.8	23.05	4.76	28.58	5.91	3.84	220.90	4.76	273.91
Arizona																		
Arkansas		1	1	68	70	70	.4	4,575.0	37.3	187.3		17.04		32.99		90.97		176.10
California																		
Colorado	3		1	200	201	204	1.2	1,800.0	43.0	139.2	5.14	2.97	5.57	3.22	.86	57.41	.93	62.25
Georgia				1	1	1	(5)		39.0	39.0		1.45		2.77		37.17		70.92
Illinois	23		20	1,088	1,108	1,131	6.6	1,436.3	31.7	180.8	8.71	4.20	4.64	2.23	1.45	69.93	.77	37.24
Indiana	7		5	388	393	400	2.3	315.0	40.3	148.1	10.16	4.17	6.77	2.77	1.69	95.05	1.13	63.32
Iowa	6		1	47	48	54	.3	3,600.0	24.4	754.6	51.27	6.76	86.02	11.34	8.54	68.35	14.34	114.69
Kansas				4	4	4	(5)		41.8	41.8		2.28		5.38		54.66		128.75
Kentucky	55	4	60	2,340	2,404	2,459	14.2	6,50.6	36.6	194.6	6.63	2.99	6.12	2.76	1.11	48.31	1.02	44.61
Maryland	2		1	27	28	30	.2	75.0	36.1	435.0	20.01	1.75	36.94	3.23	3.34	46.70	6.16	86.20
Missouri				7	7	7	(5)		39.1	39.1		.70		1.78		17.89		45.46
Montana	1			25	25	26	.2		28.9	258.6	15.15	1.83	12.66	1.53	2.52	63.12	2.11	52.75
New Mexico	2			26	26	28	.2		39.4	465.2	18.29	1.56	23.44	2.00	3.05	39.63	3.91	50.78
North Dakota			1	9	10	10	.1	300.0	32.2	59.0		7.71		11.87		130.64		201.11
Ohio	10		14	505	519	529	3.1	535.7	41.7	167.4	5.72	2.72	4.67	2.22	.95	49.49	.78	40.38
Oklahoma	1		1	137	138	139	.8	150.0	35.6	79.4	4.55	3.82	6.89	5.78	.76	104.69	1.15	158.40
Oregon																		
Pennsylvania (bituminous)	63	1	70	2,778	2,849	2,912	16.9	760.2	40.2	188.5	4.52	2.04	5.17	2.34	.75	34.08	.86	38.97
South Dakota																		
Tennessee	7	1	11	299	311	318	1.8	668.2	33.0	205.1	6.84	3.78	8.51	4.71	1.14	50.63	1.42	63.00
Utah	9		5	329	334	343	2.0	588.8	36.9	201.4	10.47	2.92	8.25	2.30	1.74	64.74	1.38	51.04
Virginia	29	3	20	1,023	1,046	1,075	6.2	374.3	36.0	219.8	9.80	3.51	10.28	3.68	1.63	58.92	1.71	61.80
Washington	2			129	129	131	.8		33.0	124.1	14.71	5.22	20.08	7.13	2.45	158.15	3.35	215.83
West Virginia	113	7	197	6,685	6,889	7,002	40.6	713.0	36.0	157.3	6.21	3.87	5.51	3.44	1.03	63.07	.92	56.03
Wyoming	2		4	35	39	41	.2	1,893.8	83.5	548.7	4.16	3.64	3.39	2.96	.69	13.52	.56	11.00
Total bituminous	349	17	438	16,456	16,911	17,260		722.0	37.2	181.0	6.39	3.14	5.99	2.95	1.06	51.59	1.00	48.41
Pennsylvania (anthracite)	60	2	34	3,331	3,367	3,427		589.4	25.8	139.4	8.69	2.84	17.49	5.73	1.45	81.24	2.92	163.60
Total underground (including shaft and slope)	409	19	472	19,787	20,278	20,687		712.5	35.3	174.1	6.65	3.11	6.63	3.10	1.11	54.92	1.11	54.82
Surface:																		
Alabama			5	24	29	29	1.5	1,600.0	41.1	309.9		3.15				10.18		
Alaska				20	20	20	1.1		24.4	24.4		3.06				125.52		
Arizona																		
Arkansas				6	6	6	.3		38.2	38.2		1.70				44.61		
California																		
Colorado				25	25	25	1.3		17.9	17.9		.53				29.57		
Georgia																		
Illinois	5	1	6	160	167	172	9.0	287.5	26.8	214.3	5.81	2.33			.97	32.34		
Indiana	1			40	40	41	2.2		21.0	166.9	4.69	.66			.78	31.28		
Iowa				2	2	2	.1		9.0	9.0		.18				20.48		
Kansas																		
Kentucky	4		12	275	287	291	15.3	446.9	26.1	125.6	2.32	1.21			.39	27.60		
Maryland				2	2	2	.1		37.0	37.0		.66				17.88		
Missouri																		
Montana				5	5	5	.3		17.6	17.6		.50				28.61		

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New Mexico				2	2	2	.1		32.0	32.0		.53				16.52		
North Dakota				2	2	2	.1		28.0	28.0		.95				33.92		
Ohio	3		2	72	74	77	4.0	187.5	30.0	266.7	5.87	.83			.98	24.14		
Oklahoma				4	4	4	.2		18.5	18.5		.29				15.82		
Oregon																		
Pennsylvania (bituminous)	6		17	216	233	239	12.6	639.7	33.2	226.2	2.33	1.17			.39	15.07		
South Dakota																		
Tennessee			1	25	26	26	1.4	600.0	35.0	56.7		1.12				10.69		
Utah	1		1	34	35	36	1.9	150.0	26.9	196.3	3.56	.63			.59	20.75		
Virginia	2		9	82	91	93	4.9	1,325.0	29.2	283.0	3.68	4.40			.61	27.93		
Washington				17	17	17	.9		17.1	17.1		1.00				58.60		
West Virginia	5		22	782	804	809	42.5	252.3	30.8	73.7	1.32	1.30			.22	35.34		
Wyoming				5	5	5	.3		24.2	24.2		.17				7.16		
Total bituminous	27	1	75	1,800	1,876	1,903		594.2	29.3	139.5	2.31	1.47			.38	26.70		
Pennsylvania (anthracite)[4]	4		9	491	500	504		458.3	24.8	80.0	1.22	.83			.20	25.41		
Total surface	31	1	84	2,291	2,376	2,407		579.6	28.4	127.0	2.07	1.33			.34	26.42		
Total underground mines:																		
Bituminous coal	376	18	513	18,256	18,787	19,163		703.3	36.4	176.9	5.67	2.85	6.46	3.25	.94	47.20	1.08	53.79
Anthracite[6]	64	2	43	3,822	3,867	3,931		561.9	25.6	131.8	6.28	2.20	18.66	6.52	1.05	63.27	3.11	187.89
Total deep mines	440	20	556	22,078	22,654	23,094		692.4	34.6	169.2	5.75	2.76	7.14	3.45	.96	49.33	1.19	61.25
Strip mines:																		
Alabama	1		1	26	27	28	2.1	3,600.0	19.2	360.7	5.41	3.69	3.60	2.46	.90	21.31	.60	16.18
Alaska				25	25	25	1.9		12.4	12.4		1.33		.68		107.47		55.19
Arizona																		
Arkansas				9	9	9	.7		30.7	30.7		1.09		.74		35.61		24.20
California																		
Colorado				2	2	2	.1		32.0	32.0		.46		.18		14.35		5.47
Georgia																		
Illinois	1		2	135	137	138	10.3	356.5	27.7	75.7	1.03	.76	.36	.27	.17	23.53	.06	8.24
Indiana	1		2	119	121	122	9.1	1,575.0	31.2	105.5	1.61	1.84	.61	.70	.27	32.43	.10	12.35
Iowa				12	12	12	.9		14.7	14.7		.36		.18		24.56		12.57
Kansas				26	26	26	1.9		22.8	22.8		.74		.50		32.37		21.89
Kentucky	3		1	107	108	111	8.2	75.0	22.8	184.8	5.38	.75	1.75	.24	.90	32.27	.29	10.51
Maryland				15	15	15	1.1		24.7	24.7		1.82		1.58		73.48		63.83
Missouri				42	42	42	3.1		19.2	19.2		.66		.29		34.23		15.24
Montana				8	8	8	.6		3.8	3.8		.22		(5)		57.51		5.60
New Mexico																		
North Dakota			1	23	24	24	1.8	150.0	21.5	26.9		.94		.24		35.08		8.78
Ohio	4		4	189	193	197	14.6	356.3	27.8	155.7	2.62	.73	1.12	.31	.44	21.10	.19	9.01
Oklahoma	1			14	14	15	1.1		21.6	420.2	7.80	.39	4.57	.23	1.30	18.19	.76	10.67
Oregon																		
Pennsylvania (bituminous)	4		14	313	327	331	24.6	787.5	22.4	127.0	1.99	1.50	1.17	.88	.33	27.17	.20	16.00
South Dakota				1	1	1	.1		3.0	3.0		.14		.14		47.31		45.87
Tennessee	3			13	13	16	1.2		14.8	1,137.0	43.74	.47	25.62	.27	7.29	31.59	4.27	18.50
Utah																		
Virginia	1		1	25	26	27	2.0	150.0	24.1	250.1	7.10	.89	3.32	.42	1.18	30.76	.55	14.39
Washington				2	2	2	.1		3.0	3.0		.12		.07		39.77		21.98
West Virginia	2		9	175	184	186	13.8	770.9	16.1	117.0	2.75	2.24	1.17	.95	.46	42.22	.20	17.98
Wyoming				9	9	9	.7		31.9	31.9		.67		.17		20.97		5.27
Total bituminous	21		35	1,290	1,325	1,346		777.9	23.3	136.1	2.72	1.24	1.18	.54	.45	28.65	.20	12.43
Pennsylvania (anthracite)			7	272	279	279		396.4	22.2	31.6		1.08		.89		34.22		28.08
Total strip mines	21		42	1,562	1,604	1,625		714.3	23.1	118.2	2.32	1.21	1.08	.57	.39	29.48	.18	13.76
Total:																		
Alabama	13		32	241	273	286	1.4	671.4	49.9	389.9	4.62	1.99	6.12	2.63	.77	16.18	1.02	21.40
Alaska	2			160	160	162	.8		20.5	94.3	13.15	3.59	13.75	3.75	2.19	175.33	2.29	183.32
Arizona																		
Arkansas		1	1	83	85	85	.4	4,575.0	36.7	160.2		11.77		17.70		73.48		110.47
California																		
Colorado	3		1	227	228	231	1.1	1,800.0	40.1	125.1	4.01	2.43	5.01	3.03	.67	50.82	.83	63.43
Georgia				1	1	1	(5)		39.0	39.0		1.21		2.77		31.01		70.92
Illinois	29	1	28	1,383	1,412	1,441	7.0	1,113.0	33.1	178.3	6.49	3.09	3.75	1.79	1.08	52.63	.63	30.44
Indiana	9		7	547	554	563	2.7	675.0	36.9	140.2	5.91	2.73	3.37	1.56	.98	60.59	.56	34.62
Iowa	6		1	61	62	68	.3	3,600.0	22.0	602.1	27.94	3.84	26.22	3.60	4.66	48.12	4.37	45.16

See footnotes at end of table.

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TABLE 94.—*Number of injuries, by percentage distribution, average severity, and injury rates at coal mines in the United States, by States and degree of injury, 1953*—Continued

State	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3]				Frequency rates[4]			
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Per thousand man-hours		Per thousand tons		Per million man-hours		Per million tons	
		Permanent		Temporary total	Total nonfatal						Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal
		Total	Partial															
Total—Continued																		
Kansas				30	30	30	0.1		25.3	25.3		0.85		0.62		33.65		24.62
Kentucky	62	4	73	2,722	2,799	2,861	13.9	609.3	35.0	187.2	5.86	2.58	5.80	2.55	0.98	44.10	0.97	43.62
Maryland	2		1	44	45	47	.2	75.0	32.3	287.1	13.11	1.63	21.43	2.67	2.18	49.15	3.57	80.38
Missouri				49	49	49	.2		22.0	22.0		.63		.37		28.60		16.84
Montana	1			38	38	39	.2		22.1	175.4	8.45	1.18	3.15	.44	1.41	53.52	.53	19.97
New Mexico	2			28	28	30	.1		38.9	436.3	15.37	1.39	23.14	2.10	2.56	35.86	3.86	53.98
North Dakota			2	34	36	36	.2	225.0	24.7	35.9		1.58		.46		43.92		12.93
Ohio	17		20	766	786	803	3.9	465.0	37.2	174.0	4.49	1.66	2.98	1.10	.75	34.62	.50	22.94
Oklahoma	2		1	155	156	158	.8	150.0	33.9	110.2	5.13	2.31	5.50	2.48	.85	66.65	.92	71.46
Oregon																		
Pennsylvania (bituminous)	73	1	101	3,307	3,409	3,482	17.0	743.7	38.1	185.3	3.94	1.86	4.68	2.21	.66	30.68	.78	36.44
South Dakota				1	1	1	(5)		3.0	3.0		.14		.14		46.96		45.86
Tennessee	10	1	12	337	350	360	1.8	662.5	32.5	235.8	7.62	3.16	10.64	4.41	1.27	44.44	1.77	62.07
Utah	10		6	363	369	379	1.8	515.7	35.9	200.9	8.76	2.36	9.17	2.47	1.46	53.90	1.53	56.39
Virginia	32	3	30	1,130	1,163	1,195	5.8	652.0	35.3	225.4	8.78	3.54	10.25	4.13	1.46	53.21	1.71	62.09
Washington	2			148	148	150	.7		30.8	110.4	10.38	3.94	17.42	6.62	1.73	128.02	2.90	214.90
West Virginia	120	7	228	7,642	7,877	7,997	39.0	670.8	35.0	147.9	5.28	3.39	5.41	3.47	.88	57.78	.90	59.15
Wyoming	2		4	49	53	55	.3	1893.8	67.9	416.4	2.99	2.72	2.28	2.08	.50	13.21	.38	10.09
Total bituminous	397	18	548	19,546	20,112	20,509		708.1	35.6	174.2	5.36	2.68	5.22	2.61	.89	45.26	.87	44.12
Pennsylvania (anthracite)	64	2	50	4,094	4,146	4,210		538.8	25.4	125.2	5.54	2.06	12.58	4.69	.92	59.85	2.10	135.85
Total all mines	461	20	598	23,640	24,258	24,719		693.9	33.8	165.9	5.39	2.60	5.69	2.74	.90	47.23	.95	49.87

[1] All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages.
[2] A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.
[3] Number of days charged per thousand man-hours.
[4] Number of injuries per million man-hours.
[5] Less than 0.05 percent.
[6] Includes injury data for washeries and dredges.

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TABLE 95.—*Number of injuries, by percentage distribution, average severity, and injury rates at coal mines in the United States, by States and degree of injury, 1954*

State	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3]				Frequency rates[4]			
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Per thousand man-hours		Per thousand tons		Per million man-hours		Per million tons	
		Permanent		Temporary total	Total nonfatal						Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal
		Total	Partial															
Underground mines:																		
Underground (including shaft and slope):																		
Alabama	10	1	25	139	165	175	1.4	726.5	54.9	524.5	5.66	3.00	6.64	3.52	0.94	15.58	1.11	18.27
Alaska				35	35	35	.3		18.7	18.7		1.89		2.30		101.00		122.91
Arizona																		
Arkansas			1	49	50	50	.4	150.0	34.5	36.8		3.46		6.51		93.92		176.98
California																		
Colorado	3	1	5	116	122	125	1.0	675.0	44.8	260.6	6.58	5.33	6.88	5.58	1.10	44.63	1.15	46.66
Georgia				2	2	2	(5)		23.0	23.0		1.24		2.04		53.76		88.89
Illinois	18		17	869	886	904	7.3	947.1	36.1	172.0	8.45	3.71	4.06	1.78	1.41	69.29	.68	33.33
Indiana	7		1	252	253	260	2.1	300.0	31.5	193.3	14.23	2.79	8.62	1.69	2.37	85.70	1.44	51.92
Iowa				26	26	26	.2		20.2	20.2		1.05		1.58		52.13		78.35
Kansas				3	3	3	(5)		32.3	32.3		1.36		3.89		42.07		120.32
Kentucky	51	4	51	1,956	2,011	2,062	16.6	646.8	34.9	209.1	7.78	3.18	6.44	2.64	1.30	51.12	1.07	42.35
Maryland				18	18	18	.1		44.9	44.9		1.82		3.52		40.60		78.25
Missouri				6	6	6	(5)		57.5	57.5		.88		2.14		15.39		37.30
Montana	1		1	29	30	31	.2	300.0	19.1	221.1	17.42	2.48	13.87	1.98	2.90	87.12	2.31	69.35
New Mexico				6	6	6	(5)		39.2	39.2		.98		1.24		24.96		31.63
North Dakota		1	1	1	3	3	(5)	150.0	13.0	2,054.3		208.92		264.06		101.69		128.54
Ohio	4	1	14	361	376	380	3.1	1,108.9	38.0	155.9	3.03	4.45	2.23	3.27	.51	47.52	.37	34.90
Oklahoma				123	123	123	1.0		28.9	28.9		2.96		4.51		102.39		156.05
Oregon																		
Pennsylvania (bituminous)	42	2	47	1,521	1,570	1,612	13.0	805.9	43.5	228.3	4.54	2.09	4.66	2.15	.76	28.28	.78	29.04
South Dakota																		
Tennessee	5		11	258	269	274	2.2	675.0	48.4	182.2	4.80	3.19	5.80	3.85	.80	43.06	.97	52.01
Utah	6		4	145	149	155	1.2	693.8	44.2	291.6	11.27	2.88	7.22	1.84	1.88	46.64	1.20	29.87
Virginia	22		20	752	772	794	6.4	410.3	40.0	214.4	9.58	2.78	8.84	2.56	1.60	56.03	1.47	51.72
Washington	1		1	79	80	81	.7	75.0	36.6	110.7	9.59	4.74	10.50	5.19	1.60	127.87	1.75	140.06
West Virginia	121	1	140	4,986	5,127	5,248	42.3	616.3	34.9	189.1	8.95	3.28	6.90	2.53	1.49	63.19	1.15	48.71
Wyoming			5	24	29	29	.2	1,050.0	30.3	206.1		6.01		4.27		29.14		20.74
Total bituminous	291	11	344	11,756	12,111	12,402		682.9	37.0	200.1	7.22	3.04	6.01	2.53	1.20	50.05	1.00	41.69
Pennsylvania (anthracite)	51		48	2,404	2,452	2,503		906.8	26.7	165.3	10.60	3.73	15.94	5.62	1.77	84.92	2.66	127.73
Total underground including shaft and slope)	342	11	392	14,160	14,563	14,905		710.3	35.3	194.3	7.58	3.12	6.63	2.73	1.26	53.77	1.10	47.02
Surface:																		
Alabama	1			19	19	20	1.4		35.8	334.1	2.44	.28			.41	7.73		
Alaska				17	17	17	1.1		14.3	14.3		1.64				114.64		
Arizona																		
Arkansas				4	4	4	.3		22.5	22.5		.84				37.28		
California																		
Colorado			1	22	23	23	1.6	3,000.0	26.0	155.3		5.50				35.42		
Georgia																		
Illinois	1		2	107	109	110	7.4	300.0	21.0	80.5	1.47	.70			.25	26.74		
Indiana				35	35	35	2.4		24.1	24.1		.83				34.38		
Iowa				5	5	5	.3		31.4	31.4		2.24				71.25		
Kansas																		
Kentucky	5		5	193	198	203	13.7	225.0	28.9	180.8	3.45	.77			.57	22.75		
Maryland				5	5	5	.3		90.8	90.8		4.28				47.18		
Missouri				2	2	2	.1		10.0	10.0		.26				26.27		
Montana				4	4	4	.3		26.5	26.5		.76				28.67		

See footnotes at end of table.

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TABLE 95.—*Number of injuries, by percentage distribution, average severity, and injury rates at coal mines in the United States, by States and degree of injury, 1954*—Continued

State	Number of injuries						Distribution of all injuries, percent[1]	Average severity[2]			Time-loss rates[3]				Frequency rates[4]			
	Fatal	Nonfatal				All injuries		Permanent partial	Temporary total	All injuries	Per thousand man-hours		Per thousand tons		Per million man-hours		Per million tons	
		Permanent		Temporary total	Total nonfatal						Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal
		Total	Partial															
Underground mines—Continued																		
Surface—Continued																		
New Mexico				2	2	2	0.1		8.0	8.0		0.25				31.65		
North Dakota																		
Ohio	1		2	44	46	47	3.2	1,650.0	34.5	230.2	2.44	1.96			0.41	18.72		
Oklahoma				7	7	7	.5		16.7	16.7		.54				32.08		
Oregon																		
Pennsylvania (bituminous)	6	1	5	171	177	183	12.4	1,342.6	44.5	307.8	3.19	1.80			.53	15.70		
South Dakota																		
Tennessee	1		2	27	29	30	2.0	450.0	35.2	261.7	4.29	1.32			.71	20.72		
Utah	1		1	28	29	30	2.0	1,800.0	26.8	285.0	5.03	2.14			.84	24.34		
Virginia	2		2	64	66	68	4.6	300.0	37.6	220.6	4.37	1.09			.73	24.05		
Washington				6	6	6	.4		31.7	31.7		.76				23.89		
West Virginia	9		28	641	669	678	45.8	367.0	27.0	120.3	2.99	1.53			.50	37.07		
Wyoming				1	1	1	.1		9.0	9.0		.03				3.10		
Total bituminous	27	1	48	1,404	1,453	1,480		589.9	29.8	160.9	2.92	1.37			.49	26.16		
Pennsylvania (anthracite)[6]	5		16	344	360	365		691.4	24.6	135.7	1.96	1.28			.33	23.55		
Total surface	32	1	64	1,748	1,813	1,845		615.3	28.8	155.9	2.71	1.35			.45	25.59		
Total underground mines:																		
Bituminous coal	318	12	392	13,160	13,564	13,882		671.5	36.3	196.0	6.41	2.73	6.57	2.80	1.07	45.59	1.09	46.69
Anthracite[6]	56		64	2,748	2,812	2,868		852.9	26.5	161.6	7.61	2.88	17.50	6.63	1.27	63.68	2.92	146.48
Total deep mines	374	12	456	15,908	16,376	16,750		697.0	34.6	190.1	6.57	2.75	7.25	3.03	1.09	47.93	1.21	52.87
Strip mines:																		
Alabama				25	25	25	2.1		29.2	29.2		.75		.47		25.68		16.00
Alaska	1			24	24	25	2.1		13.4	252.9	33.75	1.81	15.87	.85	5.62	135.00	2.64	63.47
Arizona																		
Arkansas				6	6	6	.5		26.8	26.8		.76		.62		28.19		23.28
California																		
Colorado				2	2	2	.2		5.5	5.5		.11		.04		20.28		6.68
Georgia																		
Illinois	3			177	177	180	15.0		24.3	123.9	3.43	.82	1.10	.26	.57	33.73	.18	10.77
Indiana	1			75	75	76	6.3		30.8	109.3	2.29	.88	.73	.28	.38	28.62	.12	9.15
Iowa				12	12	12	1.0		39.3	39.3		.98		.56		25.08		14.29
Kansas				10	10	10	.8		26.4	26.4		.45		.23		17.00		8.54
Kentucky				80	80	80	6.7		21.8	21.8		.48		.15		22.25		6.82
Maryland				11	11	11	.9		37.0	37.0		3.16		2.01		85.49		54.20
Missouri	1		1	18	19	20	1.7	75.0	24.2	325.5	5.46	.46	2.11	.18	.91	17.29	.35	6.69
Montana				6	6	6	.5		23.7	23.7		1.20		.13		50.68		5.47
New Mexico																		
North Dakota		1	1	24	26	26	2.2	375.0	23.5	266.8		10.67		2.46		39.98		9.22
Ohio	1		3	221	224	225	18.8	1,150.0	25.7	67.3	.74	1.12	.27	.41	.12	27.45	.05	10.17
Oklahoma			1	9	10	10	.8	1,500.0	14.9	163.4		2.90		1.50		17.77		9.19
Oregon																		
Pennsylvania (bituminous)	4	1	4	284	289	293	24.5	825.0	24.6	137.5	2.37	1.61	1.39	.94	.40	28.60	.23	16.71
South Dakota																		
Tennessee				17	17	17	1.4		21.1	21.1		.39		.21		18.35		9.99
Utah																		
Virginia				14	14	14	1.2		27.1	27.1		.77		.38		28.38		14.06
Washington				2	2	2	.2		18.5	18.5		1.10		.62		59.64		33.25

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West Virginia	5		7	142	149	154	12.9	803.6	15.7	245.8	8.52	2.23	3.36	.88	1.42	42.33	.56	16.68
Wyoming				4	4	4	.3		33.3	33.3		.36		.09		10.77		2.78
Total bituminous	16	2	17	1,163	1,182	1,198		842.6	23.9	125.3	2.39	1.35	.95	.53	.40	29.40	.16	11.65
Pennsylvania (anthracite)	6		3	157	160	166		793.7	26.2	256.0	5.94	1.07	3.70	.67	.99	26.39	.62	16.43
Total strip mines	22	2	20	1,320	1,342	1,364		835.3	24.2	141.2	2.85	1.31	1.19	.55	.48	29.01	.20	12.07
Total:																		
Alabama	11	1	25	183	209	220	1.5	726.5	49.4	450.9	4.71	2.37	6.23	3.13	.78	14.90	1.04	19.73
Alaska	1			76	76	77	.5		16.1	93.8	8.92	1.82	9.05	1.84	1.49	113.00	1.51	114.65
Arizona																		
Arkansas			1	59	60	60	.4	150.0	32.9	34.9		2.45		3.87		70.38		111.06
California																		
Colorado	3	1	6	140	147	150	1.0	1,062.5	41.3	241.1	5.17	5.22	6.18	6.23	.86	42.22	1.03	50.45
Georgia				2	2	2	(5)		23.0	23.0		1.01		2.04		43.86		88.89
Illinois	22		19	1,153	1,172	1,194	7.9	878.9	32.9	156.3	5.97	2.47	3.07	1.27	.99	53.01	.51	27.24
Indiana	8		1	362	363	371	2.5	300.0	30.7	160.1	7.28	1.73	3.67	.87	1.21	55.08	.61	27.77
Iowa				43	43	43	.3		26.8	26.8		1.10		.98		41.05		36.70
Kansas				13	13	13	.1		27.8	27.8		.54		.30		19.44		10.87
Kentucky	56	4	56	2,229	2,289	2,345	15.6	609.2	33.9	200.3	6.51	2.59	5.67	2.26	1.08	44.33	.95	38.65
Maryland				34	34	34	.2		49.1	49.1		2.46		3.86		50.15		78.53
Missouri	1		1	26	27	28	.2	75.0	30.8	245.5	3.83	.56	2.00	.29	.64	17.26	.33	8.99
Montana	1		1	39	40	41	.3	300.0	20.6	173.2	9.96	1.83	3.92	.72	1.66	66.42	.65	26.14
New Mexico				8	8	8	.1		31.4	31.4		.79		1.14		25.11		36.49
North Dakota		2	2	25	29	29	.2	262.5	23.0	451.8		19.08		4.61		42.24		10.20
Ohio	6	1	19	626	646	652	4.3	1,172.4	33.4	130.7	1.94	2.65	1.10	1.50	.32	34.86	.18	19.69
Oklahoma			1	139	140	140	.9	1,500.0	27.4	37.9		2.67		2.83		70.63		74.61
Oregon																		
Pennsylvania (bituminous)	52	4	56	1,976	2,036	2,088	13.8	855.1	40.9	222.5	4.06	1.99	4.37	2.14	.68	26.48	.73	28.53
South Dakota																		
Tennessee	6		13	302	315	321	2.1	640.4	45.7	181.1	4.20	2.58	5.24	3.22	.70	36.74	.87	45.82
Utah	7		5	173	178	185	1.2	915.0	41.4	290.5	9.58	2.68	8.42	2.35	1.60	40.58	1.40	35.69
Virginia	24		22	830	852	876	5.8	400.2	39.6	211.9	8.46	2.45	9.04	2.62	1.41	50.07	1.51	53.51
Washington	1		1	87	88	89	.6	75.0	35.8	103.3	6.59	3.51	9.50	5.05	1.10	96.67	1.58	139.38
West Virginia	135	1	175	5,769	5,945	6,080	40.3	583.9	33.5	182.8	7.89	2.94	7.09	2.64	1.31	57.88	1.18	52.06
Wyoming			5	29	34	34	.2	1,050.0	29.9	179.9		3.62		2.16		20.13		11.99
Total bituminous	334	14	409	14,323	14,746	15,080		678.7	35.3	190.3	5.93	2.57	5.11	2.21	.99	43.66	.85	37.62
Pennsylvania (anthracite)	62		67	2,905	2,972	3,034		850.3	26.5	166.7	7.41	2.66	12.86	4.63	1.23	59.18	2.14	102.72
Total all mines	396	14	476	17,228	17,718	18,114		702.8	33.8	186.4	6.12	2.58	5.65	2.38	1.02	45.67	.94	42.10

[1] All percentages are calculated separately, and total percentages may differ slightly from the sums of the component percentages.
[2] A standard time-loss charge of 6,000 days is made against all fatal and permanent total injuries.
[3] Number of days charged per thousand man-hours.
[4] Number of injuries per million man-hours.
[5] Less than 0.05 percent.
[6] Includes injury data for washeries and dredges.

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MAJOR DISASTERS, 1953–54

TABLE 96.—*Major disasters*[1] *at coal mines in the United States, 1953*

Date	Mine name	Location of mine	Cause	Number killed
Mar. 3	O'Brien	Lovilia, Iowa	Coal dust ignited by black powder.	5

[1] A single accident in which 5 or more men are killed.

TABLE 97.—*Major disasters*[1] *at coal mines in the United States, 1954*

Date	Mine name	Location of mine	Cause	Number killed
Nov. 13	Jamison No. 9	Farmington, W. Va.	Gas explosion ignited by electric arc.	[2]16

[1] A single accident in which 5 or more men are killed.
[2] Includes 1 on the surface.

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HISTORICAL COAL-MINE-FATALITY EXPERIENCE

TABLE 98.—*Coal-mine-fatality rates for the United States, 1870–1954*[1]

[Includes underground and surface accidents]

Year	Bituminous-coal mines			Anthracite mines			Total		
	Per thousand employed	Per thousand 300-day workers	Per million tons mined	Per thousand employed	Per thousand 300-day workers	Per million tons mined	Per thousand employed	Per thousand 300-day workers	Per million tons mined
1870	.....	.....	.....	5.93	.....	13.47	5.93	.....	13.47
1871	.....	.....	.....	5.60	.....	10.86	5.60	.....	10.86
1872	.....	.....	.....	4.98	.....	9.20	4.98	.....	9.20
1873	.....	.....	.....	5.46	.....	10.06	5.46	.....	10.06
1874	2.11	.....	8.88	4.33	.....	9.31	3.87	.....	9.26
1875	1.60	.....	4.93	3.37	.....	10.50	3.06	.....	9.51
Average	.....	.....	.....	4.58	.....	9.94	4.30	.....	9.72
1876	1.00	.....	4.29	3.22	.....	9.96	2.83	.....	9.20
1877	2.17	.....	5.90	2.90	.....	7.56	2.77	.....	7.28
1878	1.86	.....	3.17	2.92	.....	8.62	2.62	.....	6.38
1879	2.02	.....	3.39	3.81	.....	8.67	3.30	.....	6.82
1880	1.43	.....	2.95	2.75	.....	7.05	2.21	.....	5.16
Average	1.66	.....	3.42	3.12	.....	8.31	2.72	.....	6.68
1881	1.67	.....	2.75	3.59	4.87	8.55	2.93	.....	6.04
1882	1.95	.....	3.63	3.54	4.87	8.29	2.75	.....	5.72
1883	3.09	.....	4.99	3.53	4.56	8.40	3.34	.....	6.58
1884	2.26	.....	4.11	3.28	5.12	8.94	2.80	.....	6.17
1885	1.68	.....	3.48	3.58	5.26	9.36	2.58	.....	5.91
Average	2.12	.....	3.88	3.50	4.94	8.72	2.85	.....	6.09
1886	1.85	.....	3.89	2.70	4.13	7.12	2.25	.....	5.23
1887	1.55	.....	3.08	2.95	4.25	7.46	2.20	.....	4.86
1888	2.23	.....	4.38	2.98	4.10	7.81	2.55	.....	5.61
1889	1.77	.....	3.44	3.11	4.81	8.45	2.36	.....	5.22
1890	2.15	2.85	3.56	3.00	4.50	8.13	2.52	3.50	5.01
Average	1.94	.....	3.68	2.96	4.36	7.82	2.39	.....	5.19
1891	2.86	3.85	4.94	3.39	5.01	8.45	3.08	4.30	6.06
1892	3.05	4.17	5.06	3.24	4.91	7.97	3.12	4.42	5.98
1893	2.26	3.32	4.07	3.42	5.21	8.43	2.70	4.03	5.39
1894	2.26	3.96	4.65	3.38	5.34	8.57	2.67	4.50	5.91
1895	3.09	4.78	5.46	2.95	4.51	7.26	3.04	4.68	6.00
Average	2.69	4.02	4.84	3.27	4.99	8.12	2.91	4.38	5.87
1896	2.51	3.92	4.45	3.36	5.79	9.22	2.85	4.62	5.85
1897	2.38	3.64	3.99	2.82	5.64	8.04	2.55	4.27	5.08
1898	2.64	3.75	4.06	2.82	5.57	7.70	2.71	4.28	4.97
1899	3.05	3.91	4.25	3.30	5.72	7.63	3.14	4.40	5.08
1900	3.74	4.79	5.32	2.85	5.15	7.16	3.44	4.87	5.72
Average	2.90	4.06	4.46	3.03	5.58	7.94	2.95	4.50	5.34
1901	3.16	4.21	4.74	3.53	5.40	7.60	3.27	4.54	5.40
1902	3.93	5.13	5.58	2.03	5.25	7.25	3.38	5.15	5.81
1903	3.47	4.63	5.07	3.44	5.01	6.94	3.46	4.72	5.47
1904	3.35	4.98	5.26	3.82	5.73	8.13	3.48	5.17	5.88
1905	3.53	5.02	5.14	3.89	5.43	8.29	3.63	5.14	5.78
Average	3.49	4.81	5.17	3.36	5.38	7.69	3.45	4.95	5.67

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TABLE 98.—*Coal-mine-fatality rates for the United States, 1870–1954*[1]—Continued

Year	Bituminous-coal mines			Anthracite mines			Total		
	Per thousand employed	Per thousand 300-day workers	Per million tons mined	Per thousand employed	Per thousand 300-day workers	Per million tons mined	Per thousand employed	Per thousand 300-day workers	Per million tons mined
1906	3.38	4.76	4.72	3.43	5.28	7.81	3.39	4.87	5.27
1907	4.99	6.40	6.46	4.23	5.77	8.27	4.81	6.25	6.78
1908	3.50	5.44	5.42	3.89	5.84	8.14	3.60	5.54	5.97
1909	4.15	5.58	5.46	3.40	4.79	6.99	3.96	5.35	5.73
1910	4.00	5.53	5.32	3.55	4.65	7.11	3.89	5.30	5.62
Average	4.01	5.57	5.50	3.70	5.25	7.67	3.94	5.48	5.89
1911	3.53	5.02	4.82	4.02	4.90	7.73	3.65	4.97	5.35
1912	3.31	4.46	4.04	3.45	4.48	7.12	3.35	4.46	4.53
1913	3.79	4.90	4.53	3.52	4.10	6.75	3.73	4.70	4.89
1914	3.19	4.90	4.40	3.31	4.05	6.55	3.22	4.66	4.78
1915	3.02	4.47	3.80	3.32	4.33	6.58	3.09	4.44	4.27
Average	3.27	4.75	4.31	3.52	4.37	6.95	3.40	4.65	4.76
1916	2.98	3.88	3.33	3.47	4.11	6.34	3.09	3.93	3.77
1917	3.50	4.33	3.83	3.77	3.98	5.84	3.56	4.25	4.14
1918	3.30	3.97	3.50	3.75	3.83	5.58	3.38	3.94	3.80
1919	2.71	4.16	3.62	4.11	4.64	7.21	2.99	4.28	4.19
1920	2.78	3.79	3.13	3.38	3.74	5.48	2.90	3.78	3.45
Average	3.05	4.03	3.48	3.70	4.06	6.07	3.18	4.03	3.86
1921	2.18	4.38	3.48	3.43	3.80	6.05	2.42	4.20	3.94
1922	2.45	5.16	3.99	1.91	3.81	5.49	2.35	4.90	4.16
1923	2.77	4.65	3.46	3.23	3.62	5.45	2.85	4.39	3.74
1924	3.08	5.39	3.94	3.10	3.39	5.64	3.08	4.80	4.20
1925	3.12	4.79	3.53	2.50	4.12	6.47	2.98	4.65	3.84
Average	2.70	4.87	3.67	2.83	3.71	5.80	2.73	4.58	3.96
1926	3.48	4.86	3.60	2.74	3.37	5.36	3.32	4.50	3.83
1927	2.93	4.60	3.36	2.96	3.94	6.11	2.94	4.43	3.73
1928	3.31	4.90	3.45	2.78	3.85	5.93	3.19	4.64	3.78
1929	3.39	4.63	3.19	3.18	4.24	6.53	3.34	4.54	3.59
1930	3.28	5.26	3.46	2.94	4.22	6.40	3.20	5.00	3.84
Average	3.27	4.84	3.42	2.92	3.90	6.04	3.19	4.61	3.75
1931	2.40	4.42	2.83	2.75	4.43	6.42	2.48	4.42	3.31
1932	2.36	4.85	3.09	2.05	3.83	4.99	2.29	4.60	3.36
1933	1.99	3.58	2.50	2.21	3.58	4.66	2.03	3.58	2.78
1934	2.09	3.52	2.67	2.47	3.61	4.69	2.16	3.54	2.94
1935	2.09	3.53	2.60	2.66	4.26	5.24	2.20	3.67	2.92
Average	2.18	3.93	2.73	2.44	3.96	5.23	2.24	3.93	3.06
1936	2.28	3.46	2.52	2.39	3.73	4.46	2.30	3.50	2.73
1937	2.44	3.74	2.68	2.17	3.44	4.15	2.40	3.69	2.83
1938	1.98	3.68	2.52	2.34	4.08	4.88	2.04	3.76	2.79
1939	1.95	3.29	2.19	2.24	3.61	4.11	2.00	3.35	2.41
1940	2.73	4.07	2.61	1.99	3.16	3.57	2.60	3.92	2.71
Average	2.28	3.65	2.51	2.23	3.60	4.23	2.27	3.64	2.70
1941	2.34	3.28	2.08	2.18	3.16	3.58	2.32	3.26	2.22
1942	2.77	3.41	2.14	2.75	3.45	3.88	2.77	3.42	2.30
1943	3.01	3.44	2.06	2.85	3.17	3.80	2.98	3.39	2.22
1944	2.99	3.22	1.81	2.24	2.29	2.74	2.86	3.05	1.90
1945	2.53	2.96	1.60	1.96	2.19	2.60	2.44	2.82	1.69
Average	2.72	3.27	1.94	2.41	2.84	3.32	2.67	3.20	2.06

See footnote at end of table.

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TABLE 98.—*Coal-mine-fatality rates for the United States, 1870–1954*[1]—Continued

Year	Bituminous-coal mines			Anthracite mines			Total		
	Per thousand employed	Per thousand 300-day workers	Per million tons mined	Per thousand employed	Per thousand 300-day workers	Per million tons mined	Per thousand employed	Per thousand 300-day workers	Per million tons mined
1946	2.06	2.88	1.49	2.22	2.47	2.86	2.09	2.80	1.63
1947	2.39	3.04	1.57	2.20	2.57	3.03	2.36	2.96	1.69
1948	2.01	2.73	1.45	1.76	2.00	2.40	1.97	2.60	1.54
1949	1.21	2.19	1.13	1.20	1.83	2.11	1.21	2.13	1.22
1950	1.35	2.19	1.06	1.25	1.77	2.09	1.33	2.11	1.14
Average	1.80	2.65	1.36	1.73	2.16	2.54	1.79	2.56	1.47
1951	1.84	2.74	1.28	1.45	2.09	2.41	1.78	2.64	1.37
1952	1.33	2.14	.96	1.58	2.29	2.44	1.37	2.16	1.07
1953	1.34	2.12	.87	1.15	2.04	2.10	1.31	2.11	.95
1954	1.38	2.34	.85	1.48	2.72	2.14	1.40	2.40	.94

[1] Before 1910 certain States did not maintain records of accidents. The above rates are based exclusively on tonnage and men employed in States for which accident records are available.

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TABLE 99.—***Bituminous-coal mines:*** *Fatalities, by principal accident agencies, 1906–54*[1]

Year	Falls of roof and face	Haulage	Gas or dust explosions	Explosives	Electricity	All other underground	Total underground	Shaft	Underground and shaft	Surface[2]	Grand total
1906	826	192	219	115	52	27	1,431	73	1,504	77	1,581
1907	911	260	911	134	49	99	2,364	59	2,423	111	2,534
1908	829	229	320	109	53	97	1,637	53	1,690	77	1,767
1909	975	240	264	122	52	312	1,965	37	2,002	73	2,075
1910	1,061	295	477	113	76	46	2,068	60	2,128	92	2,220
5-year average	921	243	438	119	56	116	1,893	56	1,949	86	2,035
1911	1,007	294	331	72	92	44	1,840	31	1,871	86	1,957
1912	943	296	255	70	75	44	1,683	39	1,722	96	1,818
1913	1,007	344	464	63	79	82	2,039	32	2,071	96	2,167
1914	903	309	305	56	86	55	1,714	41	1,755	104	1,859
1915	818	269	270	76	85	35	1,553	30	1,583	100	1,683
5-year average	936	303	325	67	83	52	1,766	35	1,801	96	1,897
1916	850	330	183	60	81	49	1,553	34	1,587	84	1,671
1917	965	433	319	55	76	60	1,908	44	1,952	162	2,114
1918	1,052	446	103	85	77	76	1,839	41	1,880	149	2,029
1919	878	310	149	57	64	79	1,537	39	1,576	112	1,688
1920	937	342	124	82	70	72	1,627	34	1,661	120	1,781
5-year average	936	372	176	68	74	67	1,693	38	1,731	126	1,857
1921	782	275	62	74	76	71	1,340	25	1,365	83	1,448
1922	780	286	298	55	71	56	1,546	36	1,582	102	1,684
1923	948	347	330	66	70	64	1,825	31	1,856	97	1,953
1924	846	299	486	46	72	56	1,805	17	1,822	84	1,906
1925	910	310	302	49	80	76	1,727	30	1,757	77	1,834
5-year average	853	303	296	58	74	65	1,649	27	1,676	89	1,765
1926	994	384	373	46	94	62	1,953	27	1,980	85	2,065
1927	924	309	187	48	94	70	1,632	22	1,654	88	1,742
1928	825	313	347	41	82	54	1,662	13	1,675	54	1,729
1929	922	319	168	45	75	56	1,615	17	1,632	73	1,705
1930	856	285	234	31	63	68	1,537	9	1,546	73	1,619
5-year average	904	328	262	42	82	62	1,680	17	1,697	75	1,772
1931	624	194	68	15	62	44	1,007	19	1,026	54	1,080
1932	466	146	162	21	42	45	882	13	895	63	958
1933	458	162	27	24	46	45	762	10	772	61	833
1934	539	168	40	21	53	64	885	9	894	64	958
1935	524	198	26	31	43	70	892	13	905	63	968
5-year average	522	174	65	22	49	54	886	12	898	61	959
1936	624	202	41	31	44	81	1,023	11	1,034	64	1,098
1937	606	244	116	31	52	64	1,113	15	1,128	70	1,198
1938	474	142	84	23	38	53	814	9	823	57	880
1939	500	155	43	15	49	56	818	5	823	44	867
1940	520	192	292	28	30	62	1,124	12	1,136	68	1,204
5-year average	545	187	115	26	42	63	978	11	989	60	1,049
1941	574	191	89	24	42	65	985	9	994	78	1,072
1942	592	241	148	16	51	89	1,137	6	1,143	102	1,245
1943	592	227	166	27	33	80	1,125	5	1,130	95	1,225
1944	563	211	32	19	26	136	987	28	1,015	109	1,124
1945	453	196	72	23	20	60	824	7	831	94	925
5-year average	555	213	102	22	34	86	1,012	11	1,023	95	1,118
1946	442	152	27	12	17	44	694	17	711	84	795
1947	456	190	154	23	20	36	879	15	894	91	985
1948	474	148	39	22	19	41	743	18	761	101	862
1949	270	94	3	14	10	25	416	9	425	69	494
1950	313	98	3	10	11	24	459	10	469	81	550
5-year average	391	137	45	16	15	34	638	14	652	85	737
1951	305	101	153	7	18	28	612	6	618	66	684
1952	239	95	7	5	10	23	379	10	389	60	449
1953	233	74	9	4	12	13	345	4	349	48	397
1954	177	62	17	5	11	15	287	4	291	43	334

[1] Figures for 1906–9 cover only States that maintained complete records of fatal injuries. These represent 98 to 99 percent of the total production of coal in the United States. Figures for 1910 to date represent the entire bituminous-coal industry.

[2] Includes stripping operations.

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TABLE 100.—***Pennsylvania anthracite mines:*** *Fatalities, by principal accident agencies, 1906–54*

Year	Falls of roof and face	Haulage	Gas or dust explosions	Explosives	Electricity	All other underground	Total underground	Shaft	Underground and shaft	Surface[1]	Grand total
1906	214	67	46	82	1	27	437	19	456	101	557
1907	294	88	45	87	3	57	574	27	601	107	708
1908	299	90	55	94	1	33	572	24	596	82	678
1909	254	71	31	69	6	49	480	10	490	77	567
1910	253	93	20	82	3	38	489	20	509	92	601
5-year average	262	82	39	83	3	41	510	20	530	92	622
1911	252	92	31	88	2	126	594	21	615	84	699
1912	243	79	35	77	5	37	476	22	498	103	601
1913	257	85	50	75	1	55	523	30	553	65	618
1914	228	76	44	90	3	45	486	47	533	62	595
1915	261	80	34	79	4	58	516	10	526	60	586
5-year average	248	83	39	82	3	64	519	26	545	75	620
1916	215	64	43	86	9	57	474	15	489	66	555
1917	265	64	41	55	3	39	467	16	483	99	582
1918	242	66	26	50	11	47	442	11	453	98	551
1919	229	73	42	149	4	49	546	13	559	76	635
1920	197	66	36	49	6	40	394	22	416	75	491
5-year average	229	67	38	79	6	46	465	15	480	83	563
1921	243	70	64	68	4	50	499	11	510	37	547
1922	128	58	13	38	3	19	259	5	264	36	300
1923	219	73	42	49	5	45	433	15	448	61	509
1924	216	58	50	53	8	45	430	12	442	54	496
1925	170	56	43	53	4	20	346	4	350	50	400
5-year average	195	63	42	52	5	36	393	10	403	47	450
1926	220	52	49	50	2	39	412	8	420	33	453
1927	225	52	60	62	6	43	448	7	455	34	489
1928	243	52	29	33	6	42	405	12	417	30	447
1929	260	65	27	43	6	31	432	12	444	38	482
1930	243	40	30	47	8	34	402	10	412	32	444
5-year average	238	52	39	47	6	38	420	10	430	33	463
1931	234	43	20	25	3	23	348	9	357	26	383
1932	161	33	7	15	5	12	233	6	239	10	249
1933	119	32	13	10	7	17	198	10	208	23	231
1934	150	29	12	15	3	25	234	8	242	26	268
1935	140	30	23	19	2	15	229	22	251	23	274
5-year average	161	33	15	17	4	18	248	11	259	22	281
1936	120	26	16	20	8	26	216	14	230	14	244
1937	120	31	----------	14	4	16	185	11	196	19	215
1938	128	23	20	11	2	17	201	12	213	12	225
1939	121	27	3	17	2	15	185	13	198	13	211
1940	105	36	5	8	7	8	169	8	177	7	184
5-year average	118	29	9	14	5	16	191	12	203	13	216
1941	100	27	8	12	5	14	166	12	178	16	194
1942	132	37	9	13	6	12	209	5	214	12	226
1943	112	36	15	9	2	18	192	5	197	29	226
1944	82	16	4	16	3	18	139	12	151	23	174
1945	72	19	4	11	1	13	120	9	129	14	143
5-year average	100	27	8	12	3	15	165	9	174	19	193
1946	104	16	2	8	3	11	144	8	152	21	173
1947	84	14	35	7	4	3	147	6	153	20	173
1948	86	9	2	7	1	6	111	8	119	18	137
1949	54	10	3	3	----------	1	71	12	83	8	91
1950	58	4	5	5	1	1	74	4	78	15	93
5-year average	77	11	9	6	2	4	109	8	117	16	133
1951	51	15	7	5	1	5	84	5	89	12	101
1952	43	11	4	4	----------	14	76	9	85	14	99
1953	43	2	5	1	2	6	59	1	60	4	64
1954	39	6	1	----------	1	2	49	2	51	11	62

[1] Includes strip-mine, washery, dredge, and breaker injuries.

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TABLE 101.—***Bituminous-coal mines:*** *Percentage distribution of fatalities, by accident agencies, 1906-54*[1]

Year	Falls of roof and face	Haulage	Gas or dust explosions	Explosives	Electricity	All other underground	Total underground	Shaft	Underground and shaft	Surface[2]	Grand total
1906	52.2	12.1	13.9	7.3	3.3	1.7	90.5	4.6	95.1	4.9	100.0
1907	36.0	10.3	36.0	5.2	1.9	3.9	93.3	2.3	95.6	4.4	100.0
1908	46.9	13.0	18.1	6.1	3.0	5.5	92.6	3.0	95.6	4.4	100.0
1909	47.0	11.6	12.7	5.9	2.5	15.0	94.7	1.8	96.5	3.5	100.0
1910	47.8	13.3	21.5	5.1	3.4	2.1	93.2	2.7	95.9	4.1	100.0
5-year average	45.3	11.9	21.5	5.8	2.8	5.7	93.0	2.8	95.8	4.2	100.0
1911	51.5	15.0	16.9	3.7	4.7	2.2	94.0	1.6	95.6	4.4	100.0
1912	51.9	16.3	14.0	3.9	4.1	2.4	92.6	2.1	94.7	5.3	100.0
1913	46.5	15.9	21.4	2.9	3.6	3.8	94.1	1.5	95.6	4.4	100.0
1914	48.6	16.6	16.4	3.0	4.6	3.0	92.2	2.2	94.4	5.6	100.0
1915	48.6	16.0	16.0	4.5	5.1	2.1	92.3	1.8	94.1	5.9	100.0
5-year average	49.3	16.0	17.1	3.5	4.4	2.8	93.1	1.8	94.9	5.1	100.0
1916	50.9	19.7	11.0	3.6	4.8	2.9	92.9	2.1	95.0	5.0	100.0
1917	45.7	20.5	15.1	2.6	3.6	2.8	90.3	2.0	92.3	7.7	100.0
1918	51.8	22.0	5.1	4.2	3.8	3.7	90.6	2.1	92.7	7.3	100.0
1919	52.0	18.4	8.8	3.4	3.8	4.7	91.1	2.3	93.4	6.6	100.0
1920	52.6	19.2	7.0	4.6	3.9	4.1	91.4	1.9	93.3	6.7	100.0
5-year average	50.4	20.0	9.5	3.7	4.0	3.6	91.2	2.0	93.2	6.8	100.0
1921	51.0	19.0	4.3	5.1	5.2	4.9	92.5	1.8	94.3	5.7	100.0
1922	46.3	17.0	17.7	3.3	4.2	3.3	91.8	2.1	93.9	6.1	100.0
1923	48.5	17.8	16.9	3.3	3.6	3.3	93.4	1.6	95.0	5.0	100.0
1924	44.4	15.7	25.5	2.4	3.8	2.9	94.7	.9	95.6	4.4	100.0
1925	49.6	16.9	16.5	2.7	4.4	4.1	94.2	1.6	95.8	4.2	100.0
5-year average	48.3	17.1	16.8	3.3	4.2	3.7	93.4	1.6	95.0	5.0	100.0
1926	48.1	18.6	18.1	2.2	4.6	3.0	94.6	1.3	95.9	4.1	100.0
1927	53.1	17.7	10.7	2.8	5.4	4.0	93.7	1.2	94.9	5.1	100.0
1928	47.7	18.1	20.1	2.4	4.7	3.1	96.1	.8	96.9	3.1	100.0
1929	54.1	20.5	9.9	2.6	4.4	3.2	94.7	1.0	95.7	4.3	100.0
1930	52.9	17.6	14.4	1.9	3.9	4.2	94.9	.6	95.5	4.5	100.0
5-year average	51.0	18.5	14.8	2.4	4.6	3.5	94.8	1.0	95.8	4.2	100.0
1931	57.8	18.0	6.3	1.4	5.7	4.0	93.2	1.8	95.0	5.0	100.0
1932	48.7	15.2	16.9	2.2	4.4	4.7	92.1	1.3	93.4	6.6	100.0
1933	55.0	19.4	3.3	2.9	5.5	5.4	91.5	1.2	92.7	7.3	100.0
1934	56.3	17.5	4.2	2.2	5.5	6.7	92.4	.9	93.3	6.7	100.0
1935	54.1	20.5	2.7	3.2	4.4	7.2	92.1	1.4	93.5	6.5	100.0
5-year average	54.4	18.2	6.8	2.3	5.1	5.6	92.4	1.2	93.6	6.4	100.0
1936	56.8	18.4	3.8	2.8	4.0	7.4	93.2	1.0	94.2	5.8	100.0
1937	50.6	20.4	9.7	2.6	4.3	5.3	92.9	1.3	94.2	5.8	100.0
1938	53.9	16.1	9.6	2.6	4.3	6.0	92.5	1.0	93.5	6.5	100.0
1939	57.7	17.9	4.9	1.7	5.7	6.4	94.3	.6	94.9	5.1	100.0
1940	43.2	15.9	24.3	2.3	2.5	5.2	93.4	1.0	94.4	5.6	100.0
5-year average	51.9	17.8	11.0	2.5	4.0	6.0	93.2	1.1	94.3	5.7	100.0
1941	53.5	17.8	8.3	2.2	4.0	6.1	91.9	.8	92.7	7.3	100.0
1942	47.5	19.4	11.9	1.3	4.1	7.1	91.3	.5	91.8	8.2	100.0
1943	48.3	18.5	13.6	2.2	2.7	6.5	91.8	.4	92.2	7.8	100.0
1944	50.1	18.8	2.8	1.7	2.3	12.1	87.8	2.5	90.3	9.7	100.0
1945	48.9	21.2	7.8	2.5	2.2	6.5	89.1	.7	89.8	10.2	100.0
5-year average	49.6	19.1	9.1	2.0	3.0	7.7	90.5	1.0	91.5	8.5	100.0
1946	55.6	19.1	3.4	1.5	2.1	5.6	87.3	2.1	89.4	10.6	100.0
1947	46.3	19.3	15.6	2.3	2.0	3.7	89.2	1.6	90.8	9.2	100.0
1948	54.9	17.2	4.5	2.6	2.2	4.8	86.2	2.1	88.3	11.7	100.0
1949	54.7	19.0	.6	2.8	2.0	5.1	84.2	1.8	86.0	14.0	100.0
1950	56.9	17.8	.6	1.8	2.0	4.4	83.5	1.8	85.3	14.7	100.0
5-year average	53.1	18.6	6.1	2.2	2.0	4.6	86.6	1.9	88.5	11.5	100.0
1951	44.6	14.8	22.4	1.0	2.6	4.1	89.5	.9	90.4	9.6	100.0
1952	53.2	21.2	1.6	1.1	2.2	5.1	84.4	2.2	86.6	13.4	100.0
1953	58.7	18.6	2.3	1.0	3.0	3.3	86.9	1.0	87.9	12.1	100.0
1954	53.0	18.5	5.1	1.5	3.3	4.5	85.9	1.2	87.1	12.9	100.0

[1] Figures for 1906-9 cover only States that maintained complete records of fatal accidents. These represent 98 to 99 percent of the total production of coal in the United States. Figures for 1910 to date represent the entire bituminous-coal industry.

[2] Includes stripping operations.

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TABLE 102.—***Pennsylvania anthracite mines:*** *Percentage distribution of fatalities, by accident agencies, 1906–54*

Year	Falls of roof and face	Haulage	Gas or dust explosions	Explosives	Electricity	All other underground	Total underground	Shaft	Underground and shaft	Surface[1]	Grand total
1906	38.4	12.0	8.3	14.7	0.2	4.9	78.5	3.4	81.9	18.1	100.0
1907	41.5	12.4	6.4	12.3	.4	8.1	81.1	3.8	84.9	15.1	100.0
1908	44.1	13.3	8.1	13.9	.1	4.9	84.4	3.5	87.9	12.1	100.0
1909	44.8	12.5	5.5	12.2	1.1	8.6	84.7	1.7	86.4	13.6	100.0
1910	42.1	15.5	3.3	13.7	.5	6.3	81.4	3.3	84.7	15.3	100.0
5-year average	42.1	13.2	6.3	13.3	.5	6.6	82.0	3.2	85.2	14.8	100.0
1911	36.1	13.2	4.9	12.6	.2	18.0	85.0	3.0	88.0	12.0	100.0
1912	40.4	13.2	5.8	12.8	.8	6.2	79.2	3.7	82.9	17.1	100.0
1913	41.6	13.8	8.1	12.1	.1	8.9	84.6	4.9	89.5	10.5	100.0
1914	38.3	12.8	7.4	15.1	.5	7.6	81.7	7.9	89.6	10.4	100.0
1915	44.5	13.7	5.8	13.5	.7	9.9	88.1	1.7	89.8	10.2	100.0
5-year average	40.0	13.4	6.3	13.2	.5	10.3	83.7	4.2	87.9	12.1	100.0
1916	38.7	11.5	7.8	15.5	1.6	10.3	85.4	2.7	88.1	11.9	100.0
1917	45.5	11.0	7.0	9.5	.5	6.7	80.2	2.8	83.0	17.0	100.0
1918	43.9	12.0	4.7	9.1	2.0	8.5	80.2	2.0	82.2	17.8	100.0
1919	36.1	11.5	6.6	23.5	.6	7.7	86.0	2.0	88.0	12.0	100.0
1920	40.1	13.5	7.3	10.0	1.2	8.1	80.2	4.5	84.7	15.3	100.0
5-year average	40.7	11.9	6.7	14.0	1.1	8.2	82.6	2.7	85.3	14.7	100.0
1921	44.4	12.8	11.7	12.4	.7	9.2	91.2	2.0	93.2	6.8	100.0
1922	42.7	19.3	4.3	12.7	1.0	6.3	86.3	1.7	88.0	12.0	100.0
1923	43.0	14.3	8.3	9.6	1.0	8.9	85.1	2.9	88.0	12.0	100.0
1924	43.5	11.7	10.1	10.7	1.6	9.1	86.7	2.4	89.1	10.9	100.0
1925	42.5	14.0	10.8	13.2	1.0	5.0	86.5	1.0	87.5	12.5	100.0
5-year average	43.3	14.0	9.3	11.6	1.1	8.0	87.3	2.3	89.6	10.4	100.0
1926	48.6	11.5	10.8	11.0	.4	8.6	90.9	1.8	92.7	7.3	100.0
1927	46.0	10.6	12.3	12.7	1.2	8.8	91.6	1.4	93.0	7.0	100.0
1928	54.4	11.6	6.5	7.4	1.3	9.4	90.6	2.7	93.3	6.7	100.0
1929	53.9	13.5	5.6	8.9	1.2	6.5	89.6	2.5	92.1	7.9	100.0
1930	54.7	9.0	6.8	10.6	1.8	7.6	90.5	2.3	92.8	7.2	100.0
5-year average	51.4	11.2	8.4	10.2	1.3	8.2	90.7	2.2	92.9	7.1	100.0
1931	61.1	11.2	5.2	6.6	.8	6.0	90.9	2.3	93.2	6.8	100.0
1932	64.7	13.3	2.8	6.0	2.0	4.8	93.6	2.4	96.0	4.0	100.0
1933	51.5	13.9	5.6	4.3	3.0	7.4	85.7	4.3	90.0	10.0	100.0
1934	56.0	10.8	4.5	5.6	1.1	9.3	87.3	3.0	90.3	9.7	100.0
1935	51.1	11.0	8.4	6.9	.7	5.5	83.6	8.0	91.6	8.4	100.0
5-year average	57.3	11.8	5.3	6.1	1.4	6.4	88.3	3.9	92.2	7.8	100.0
1936	49.2	10.7	6.6	8.2	3.2	10.6	88.5	5.8	94.3	5.7	100.0
1937	55.8	14.4	.....	6.5	1.9	7.4	86.0	5.2	91.2	8.8	100.0
1938	56.9	10.2	8.9	4.9	.9	7.5	89.3	5.4	94.7	5.3	100.0
1939	57.3	12.8	1.4	8.1	1.0	7.1	87.7	6.1	93.8	6.2	100.0
1940	57.1	19.6	2.7	4.3	3.8	4.3	91.8	4.4	96.2	3.8	100.0
5-year average	54.6	13.4	4.2	6.5	2.3	7.4	88.4	5.6	94.0	6.0	100.0
1941	51.6	13.9	4.1	6.2	2.6	7.2	85.6	6.2	91.8	8.2	100.0
1942	58.4	16.4	4.0	5.8	2.6	5.3	92.5	2.2	94.7	5.3	100.0
1943	49.6	15.9	6.6	4.0	.9	8.0	85.0	2.2	87.2	12.8	100.0
1944	47.1	9.2	2.3	9.2	1.7	10.4	79.9	6.9	86.8	13.2	100.0
1945	50.3	13.3	2.8	7.7	.7	9.1	83.9	6.3	90.2	9.8	100.0
5-year average	51.8	14.0	4.1	6.2	1.6	7.8	85.5	4.7	90.2	9.8	100.0
1946	60.1	9.2	1.2	4.6	1.7	6.4	83.2	4.7	87.9	12.1	100.0
1947	48.6	8.1	20.2	4.1	2.3	1.7	85.0	3.4	88.4	11.6	100.0
1948	62.8	6.6	1.5	5.1	.7	4.3	81.0	5.9	86.9	13.1	100.0
1949	59.3	11.0	3.3	3.3	.....	1.1	78.0	13.2	91.2	8.8	100.0
1950	62.3	4.3	5.4	5.4	1.1	1.1	79.6	4.3	83.9	16.1	100.0
5-year average	57.9	8.3	6.8	4.5	1.5	3.0	82.0	6.0	88.0	12.0	100.0
1951	50.4	14.8	6.9	5.0	1.0	5.0	83.1	5.0	88.1	11.9	100.0
1952	43.4	11.1	4.1	4.1	.....	14.1	76.8	9.1	85.9	14.1	100.0
1953	67.2	3.1	7.8	1.6	3.1	9.4	92.2	1.6	93.8	6.2	100.0
1954	62.9	9.6	1.6	.....	1.6	3.3	79.0	3.3	82.3	17.7	100.0

[1] Includes strip-mine, washery, dredge, and breaker injuries.

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